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Stricture of the Urethra*

J. W. ROGERS, M.D.
407 Medical Arts Building
TULSA, OKLAHOMA

I think, due to the fact that we see fewer and less complicated strictures during the past few years, that we may be inclined to forget that people are still subject to strictures and that they may suffer in numerous ways on account of them. There has been little written on the subject in recent years and aside from one important form of treatment there has been no radical change in the care of this condition during the past 25 years.

Strictures have been treated by dilatation for many centuries. Movitt, in the Urological and Cutaneous Review, in March, 1937, states that "When Pompeii, destroyed and buried in 30 B.C., was unearthed, there were found, among other utensils in the houses, metal instruments quite similar to the metal sounds and catheters we are now using."

Due to the modern use of milder drugs, the more enlightened patients suffering from gonorrhoea and the more gentle manner in which such infections are treated, we see fewer and fewer strictures, and we see them and treat them earlier and more proficiently than was the case a quarter of a century ago.

It was quite a common thing to see patients, 25 years ago who had had internal urethrotomies done and were often in a sad state as a result.

There are innumerable classifications of strictures and I will call your attention to a few of them.

I.—As to Etiology.

A. Congenital, in which there are certain malformations of the urethra due to faulty developments.

B. Inflammatory, usually caused by gonorrhoea but occasionally by other infections.

C. Traumatic, these strictures may be caused by direct blows to the perineum, as in falling astride some object, by pelvic fractures, instrumentation, as sometimes occurs following transurethral operations and sometimes caused by patients using foreign bodies in the urethra. Chemical irritations, such as bichloride of mercury, lysol, etc., may come under this heading.

The vast majority of strictures are caused by a gonorrhoeal infection and, as I said previously, we are seeing fewer each year.

II.—Classification as to Size, Peterson classifies them as——

A. Open, when a No. 19F, or large sound can be passed.

B. Close, those from 10 F to 19 F.

C. Tight, those from filliform size to 10 F.

D. Impassable, those in which a filliform cannot be passed. But an impassable stricture is only relatively impassable, depending on one's perseverence, patience, and tools at hand.

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I recall a case that was sent into the hospital suffering severely, his abdomen was distended and I thought I could feel the distended bladder, he was able to void only a drop of urine at a time and this had been going on for two or three days. The urethra was anesthetized and we worked for 30 minutes trying to get by a stricture in the bulbous portion of the urethra. I was about ready to make a supra-puncture when a filliform passed and with a follower catheter I obtained only about an ounce of urine. I was very much surprised and shuddered to think of what would have happened had I used a trocar. I don't recall of ever having a case of inflammatory stricture that I was unable to finally get a filliform through.

III.—Clinical classification.

A. Organic.
   1. Congenital.
   2. Acquired.
      a. Inflammatory, mostly caused by gonorrhoea.
      b. Traumatic.

B. Spasmodic, those caused by spasm of the urethral muscles. It isn't always easy to be sure with which type one is dealing.

I was called to see a patient who had been operated on for appendicitis 24 hours previously, he had been unable to void and unsuccessful attempts at catheterization had been made. He gave no history of any previous urinary trouble. After injecting a local anesthetic I tried to pass soft rubber catheters, wax catheters, straight and curved, and finally filliforms, I was unable to engage a filliform or pass the obstruction in any way. Under general anaesthesia, a 27 sound was passed without difficulty and he had no further difficulty in voiding.

IV.—Classification According to Pathology.

1. According to the direction of the formation.
   a. The annular type in which the scar tissue encircles the lumen of the urethra.
   b. Irregular, in which a portion of the urethra is involved in its circumference and then distally or proximally the remaining circumference is involved.
   c. Nodular, in which the lumen is obstructed by two or more scar formations.
2. According to consistency.
   a. Soft, granular variety in which the stricture is of recent origin, bleeds easily and yields readily to treatment.
   b. The resilient type, this is more difficult to dilate and following dilatation, complications may arise. This type of stricture might be better treated with the electrotome than by simple dilatation.
   c. Indurated type, this type is extremely hard to dilate and electrourethrotomy is the treatment of choice.

Pathology: An organic stricture in a fibrous tissue formation which takes place gradually and on urethroscopic examination one will find a rigid tube in the scarred portion, with slight contractility of the walls and the normally pink walls are replaced by a white lining, often with fissures, ulcerations, and minute abscesses.

Symptoms: The most common symptom of stricture, is a periodic urethral discharge following a protracted gonorrheal infection. There is a chronic urethritis with periods of quiescence followed by active inflammation. Other common symptoms are of an obstructive nature, the stream is small, there is a tendency to dribbling, there may be lack of force to the stream, frequency is often complained of, dysuria and the most distressing of all symptoms, complete retention. Other symptoms sometimes encountered are bleeding from the urethra itself, cystitis, terminal bleeding, pyuria, incontinence, diminished or complete loss of sexual power, pain in the perineum and in complicated cases, loss of general health.

Complications are numerous and varied. Epididymitis, prostatitis, prostatic and urethral calculi, periurethritis, cystitis, and even pyelitis, periurethral abscess, and urinary extravasation.

Diagnosis: Given a suspicious history, the diagnosis is made by instrumentation. I think the flexible bulbous bougie is the instrument of choice and these may be had in all sizes and one may have to use several sizes to find two or more strictures

of different caliber in the same urethra.

Anesthetize the urethra, I prefer 1:500 nupercain, inject liquid petrolatum without very much pressure and then begin to test out the urethra with the bougie. It is often necessary to do a meatotomy, as it would be foolish to try to find a size 27 stricture through a size 20 meatus. The bulb may pass through a strictured area without one being able to detect it, if it is nearly the same size as the instrument, but on removing it one will often feel the pull as the bulb comes through the strictured area. One should locate the size and position of all the strictures at one sitting.

Treatment: The majority of strictures respond to urethral dilatation and this should be carried out gradually and gently. The large caliber strictures are often smoothed out in three or four treatments, using two or three different sized sounds at each treatment. The small caliber, soft granular strictures respond almost equally well to treatment though one may be alarmed at the bleeding that sometimes follows instrumentation in these cases.

About a year ago I had a patient whose chief complaint was bleeding from the urethra. On examination, I found a slight bloody discharge, after he voided there was some terminal bleeding. Massaging the seminal vesicles and prostate more blood was expressed from the urethra. I concluded that the bleeding was from the prostate and seminal vesicles, injected neosilvol into the bladder and asked him to report the next day. He was no better and on examination of the urethra with bulbs I found numerous strictures of various sizes. I passed a size 20F sound and the bleeding was quite profuse, this continued off and on for several days. I examined the urethra through a urethroscope and used silver nitrate on a bleeding point to no avail, the bleeding was almost alarming, to say nothing of being most distressing to the patient. In my search for help I ran across a statement by Cabot, that such bleeding could usually be controlled by the passage of an oversized sound. I was able to pass a size 26 F sound without much difficulty and to my amazement the bleeding stopped at once. I saw the patient again about a year afterwards and this time he was suffering from a periurethral abscess that I opened and advised some more treatments for the strictures but he hasn't shown up again and likely won't until he has some other distressing complication.

The treatment of the small caliber resilient strictures may require the patience of a Job on the part of both operator and patient but with care and not trying to hurry the cure one can do wonders. Anesthetize the urethra, inject oil and pass a filliform, and after trying for a time with no success, if one is not dealing with acute retention, allow the patient to rest a few days, using frequent hot sitz baths and then try again, sometimes one can fill the canal with filliforms and get one to pass by pushing on each one separately. Sometimes it is said to be possible to use a urethroscope and visualize the opening. I have never used this method successfully. If the filliform is tight, it is well to leave it in place an hour or two or even for 12 to 24 hours, at the next treatment one can usually use a follower, size 10 to possibly 12F or 14 F. If one uses an oral urinary antiseptic for a day or two before the dilatation is attempted there will likely be no urethral chill or other complications following instrumentation. I like for the patient to be on sulfanilamide or neoprontosil for at least 24 hours before and after the instrumentation. One can often gradually work these strictures up to the place where a 19 or 20 F metal sound can be passed and then the dilatation is more rapid. I hesitate to use a metal sound smaller than an 18F. The effect of the sound is not only mechanical dilatation but increased vascularization of the affected area, causing absorption of the fibrosis.

Gradual dilatation has been considered the treatment of choice in most cases for at least 25 years, for most strictures. For a time before that, internal urethrotomy with a cutting blade was a common practice and the final result was usually bad. We have all seen those fibrotic, tough strictures that were very difficult to dilate and those patients that dreaded the sight or thought of a sound, and it seems to me that we may have a fairly simple solution to these cases in the use of the urethro-electrotome.

In June, 1936, Riba of Chicago, published in the Journal of the American Medical

Association, a report of the use of electrourethratome in the treatment of a variety of strictures. In all the cases he reported, he did only one electrourethrotomy on each patient and over a three-year period had only one known recurrence out of 49 patients. The operation is usually an office procedure, under local anaesthesia, there is little bleeding and it seems likely that there is little resultant scar formation. It is well in all stricture cases to have them report at intervals of a few months to a few years for an examination, but getting an apparently well patient to report is a problem that I have never solved.

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The Post-Operative Management of Tonsillectomies*

G. E. HASLAM, M.D.
ANADARKO, OKLAHOMA

The subject of this paper deals with a problem of such common knowledge to the otolaryngologist that I feel an apology is due for my selection, however, tonsillectomy has become so lightly regarded by the average layman as a minor office procedure, in many instances as a result of advice from their family physician; and the operation is being performed by physicians other than specialists, and even cultists of all ranks—with frequent poor results and recollections of harrowing post-operative days; that I feel a few remarks along this line may not be amiss.

Taking for granted that the patient has been adequately examined pre-operatively, and sufficient reason found to subject him to this operation; and that the operation has been thoroughly done; what shall we do with him for the ten days to two weeks during his recovery?

First: the advisability of hospitalization. There can be no question that the proper place for the performance of tonsillectomies is in an equipped hospital, and that the patient should remain there under the observation of his physician and nurse for at least 24 hours in the case of children, and longer if advisable in the case of adults, especially so if any interruption in the normal postoperative course occurs.

For the first day they should be kept quiet and as comfortable as possible. This may be attained by the use of the ice collar and opiates — particularly codeine which may produce less nausea — and sedatives when they will suffice. This will suffice in the average or normal case. It is probably advisable to restrain all food until late afternoon, or at least six to eight hours following operation, when liquids and very soft solids may be taken if desired. Little discomfort is complained of in eating ice cream or cold milk drinks.

Those cases operated in the office should be done fairly early in the morning and held over under observation until late afternoon, especially so before being permitted to drive any distance to their homes. If any untoward circumstances arise during the course of the day it is far safer to transfer them to a hospital for the night at least.

Upon dismissal from the hospital or office certain specific instructions should be given the patient for his own comfort and safety, and the simplest way of impressing your orders is in written or printed form. I have used typewritten instructions for several years which are handed and explained to him before he leaves the hos-

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pital, and have found he will come much nearer following my orders in such form, and less often break over. It seems to reduce the post-operative complaints and unfortunate complications often met with.

First of all he is instructed as to his diet. I realize that it is common practice with some men to permit their patients to eat what they wish, and "can," beginning with the second day, but after having been called upon several occasions to control hemorrhage from the eating of dry crackers and "corn bread" for the first two or three days post-operative, and there are many patients who will do just this unless otherwise instructed, has impressed upon my mind the fact that the denuded surface we leave in the throat should be protected from as much trauma as possible. The first three or four days are best limited to liquid diet, with soft solids which require little or no chewing. The following four to six days the diet may be increased to include the softer vegetables which should be well chewed before swallowing. The majority of the patients should be able to resume their regular diet on the ninth or tenth day, at which time all pain and discomfort is usually past. The diet list in addition to being soft should be simple as possible and one easily prepared and available to the average family.

Rest in bed should be insisted upon for at least two to three days, afterwards sitting up and moving around the home for several days longer — always avoiding exertion and exercise. Children will usually go about their indoor playing with no untoward circumstances. The laborer, and those engaged in strenuous occupations, along with those who use their voice to a large extent should arrange before hand to absent themselves from their work for at least ten days. Occasionally it might become necessary for some office workers and like occupations to return to work within five to six days, but more often this class of worker is glad to remain away for at least one week.

The use of gargles and sprays following tonsillectomy still remains a moot question, with about as many favoring their use as those against such procedures. In the child gargling is usually unnecessary, and frequently they have never been taught to do so. The adult will often insist upon using a gargle of some form, particularly to combat the foul breath present for several days, and to relieve as much as possible the discomfort in swallowing. The type of gargle to be used depends upon the choice of the physician or patient. In the main it is perhaps best to use here the simplest and most common used, and I doubt always if any specific gargle is of more value than another.

For the relief of pain, and particularly while swallowing, aspirin or Dobels will usually suffice, though there are a number of solutions, tablets, lozenges and gums on the market, and many of them good and effective, but most of them no more so than the simplest. Ten grains of aspirin to one-half glass of water will more often give good results than any other one gargle I know of. For the relief of the foul breath so many complain of any of the more deoderant mixtures suffice, and the best of them are none too effective until nature has finished her work in the healing of the denuded surface.

The use of laxatives is best confined to mild types, since we are dealing here with a loss of strength and dehydration from a disturbance of diet and decreased fluid intake, as a result of which purging will only exaggerate. The matter of the coated tongue frequently seen is one in which a few will attempt to relieve by the frequent use of laxatives and purgatives unnecessarily, and which if left alone will correct itself when healing has taken place.

Regarding the complications following tonsillectomy probably the one most frequently met with, and the most troublesome as a rule is that of hemorrhage. Hemorrhage may be classified in two types: primary, which occurs very early, within a few hours after operation, and secondary, which develops anywhere from the second day on, but usually on the fifth to eighth day. Of the two types the primary is the most difficult to handle, and may at times be of serious nature. The secondary hemorrhage is usually of less severity, and much more easily controlled.

Primary hemorrhage as above stated, will occur within a few hours following operation, and it is for this reason best to keep the patient hospitalized until all danger from this source has passed. Under

hospitalization such hemorrhages can be detected more readily and properly taken care of before any extensive loss of blood can occur. They are also controlled with the minimum amount of discomfort to the patient. If all bleeding and oozing is stopped completely before the patient leaves the operating room the frequency of primary hemorrhages will be greatly diminished. There are several methods of controlling such hemorrhage, and the one to be used is preferably that type with which the operator is most familiar. Following local anaesthetics we are often able to carry out the necessary procedures without any further anaesthetic, though the injection of procaine and epinephrine may be necessary. Following the general anaesthetic it may be advisable to place the patient under anaesthesia again to completely and satisfactorily control the bleeding. All clots should be removed from the fossa, as they seldom offer any aid in the control of bleeding, and often appear to produce a certain amount of suction themselves which may actually aggravate such a condition. After the removal of clots the actual bleeding point, or points are located if possible, and clamped with the tonsil hemostat. After clamping two methods of choice may be used to tie off the bleeder. A suture may be placed, preferably, the figure of eight, going into the musculature both above and below the bleeding point, with fine catgut — or a purse string suture may be used, taking in several points surrounding the clamp. In suturing I prefer a stout full curved round needle, with any ordinary needleholder. The second method, and one which I much prefer, is the simple placing of a slip-knot ligature around the bleeding point. With a slip-knot tied before hand, the short end is firmly clamped with a second hemostat as near the end as possible and cut short. The long slip-end is placed over the end of the hemostat holding the bleeding point, and passed down being gradually tightened until the end of the hemostat is reached. The noose can easily be slipped over the point of the hemostat and tightened fairly tight, then removing the hemostat on the bleeder, and the one holding the short end of the ligature. The long end is then cut with the scissors. This type ligature will remain in place for several hours, and often for two to three days. They practically always remain long enough to permit the vessel to retract into the musculature.

Occasionally where well formed anterior and posterior pillars have been preserved it is possible to snugly fit a sponge into the fossa, to which tape has been anchored, and by allowing it to remain in place for several hours adequately control the milder types of hemorrhage. The tape should always be held with a clamp, or fastened to the face or ear with adhesive tape. The suturing of pillars over sponge, or the suturing of the pillars together is not desirable, and should not be attempted unless considered absolutely necessary, since it predisposes to infection, requires subsequent removal, and tends to produce adhesions and scar tissue. Hemorrhage deep down near the base may require suturing of the pillars near the bleeding point.

Secondary hemorrhage as stated before usually occurs on the fifth or sixth day. The latest one I have any recollection of in my own experience occurred on the fifteenth day, however in the presence of severe infections they may occur on even later days. Examination almost invariably will reveal a clot within the fossa, the removal of which by a cotton sponge, or sponge forceps will often alone stop the bleeding. Here again the presence of a clot appears to exert a suction action upon the bleeding point. This type hemorrhage is usually less severe, and more easily handled. Again several methods of control are available. Pressure by a soft cotton sponge, held in the fossa for a few minutes will often suffice. The sponge may be dipped in various solutions according to the desire of the individual physician, the most frequently used solutions being hydrogen peroxide, chloride of iron, tincture of benzoin, and others.

I particularly like the application of a caustic, such as 50 per cent silver nitrate, on a small tipped applicator directly to the bleeding point, and have found it most effective, and easily used in the average case. The injection of procain and epinephrine, two to three drops at several points surrounding the bleeding point will also work effectively in many cases, due to the action of the epinephrine and the edema

of the tissue produced by the fluid. It has been found that the simple injection of physiological salt solution will give the same results. However, the procain will relieve the pain if further procedures must be resorted to. There are numerous other methods of controlling hemorrhage, all of them being good in the hands of the physician accustomed to using them. The use of ligatures or sutures is rarely if ever necessary.

True sepsis following tonsillectomy is seldom seen, and if properly examined pre-operatively, and a history of too recent throat infection ruled out will very rarely cause us any worry. Too hasty operation following attacks of acute follicular tonsillitis; or low grade streptococci infections; or in the presence of infection of the gums or mouth may cause us to regret this lack of precaution. However, in the event of such an infection post-operatively they should be handled in the same manner as if operation had never occurred. The streptococcic organism is probably the most frequent offender, and the one causing the greatest concern when present in a fossa. In the past they have been difficult to handle, but today by the use of sulfanilamide the fear of such infections has been greatly reduced. Infections from the Vincents' organism may be treated locally with the various remedies in use, and generally by the use of arsenicals and bismuth.

Edema makes swallowing more difficult and uncomfortable but does not often require treatment. If relief becomes necessary astringent s p r a y s or applications should suffice.

Infections of the lungs have been considered as rare complications in the past, however more recent figures seem to indicate that they are not so rare as formerly thought. It is quite likely they occur and recovery follows without our being aware of such conditions being present. The method by which these infections reach the lungs is still in dispute. It is generally thought to be by one of two most common routes: tracheobronchial or venous. The periphery of the lung is the most common site of the lesion though no portion is safe from infection. The size may vary from a centimeter in diameter to involvement of an entire lobe.

Treatment of these cases calls for the close cooperation of the otolaryngologist, internist and bronchoscopist, together with the surgeon on occasion. From the medical aspect, rest in bed, fresh air and sunshine, nourishing diet with vitamin tonics are essential, together with postural drainage. Many cases will r e c o v e r through such handling.

From the aspect of the bronchoscopist aspiration, irrigation and medication of the diseased area is effective in the hands of a competent man. Together with the assistance of the internist the large majority of cases may be well managed and complete recovery result.

The surgeon has found good results follow artificial pneumothorax in those cases of central abscesses, and from thoracotomy where the area can be reached without disturbance of healthy tissue.

The choice of treatment to be used will depend largely upon the location of the lesion, the severity of the attack, and the facilities available at hand. With proper precaution, this complication can be often guarded against, and weeks of convalesence avoided.

TWO DOCTORS DESCRIBE METHOD OF COMBATING SERUM SICKNESS

A ray of hope for those who suffer untoward reactions from the administration of serum for such conditions as tetanus, diphtheria, scarlet fever and pneumonia, is contained in a paper by Lee Foshay, M.D., Cincinnati, and O. E. Hagebusch, M.D., St. Louis, in The Journal of the American Medical Association for June 10, which describes a method of combating serum sickness.

A preparation known as histaminase was given by mouth or intramuscular injection to 22 patients with unfavorable reactions to serum, the authors report. Twenty of these experienced definite relief in from one to 36 hours after taking the preparation.

While only rarely fatal, serum sickness is frequent and often severe. Its symptoms, which include intolerable itching, nausea, vomiting, redness of the skin, wheals, headache, chills and the like, may follow any time from a few hours to as much as seven days after the administration of serum.

One of the most common experiences with serum sickness involves those taken to hospitals for treatment of various types of wounds. One of the first steps in the treatment of such victims is the injection of anti-tetanus serum to prevent possible tetanus infection as the result of contamination of open wounds.

As to the possibilities of the substance serving as a prevention for serum reactions, the authors say: "It is possible that the use of the substance before the injection of serum will prevent the occurrence of serum sickness in some instances and ameliorate the severity in others. The treatment appears to be rational, highly effective, safe and devoid of untoward effects."

Bladder Infections in the Female*

D. W. BRANHAM, M.D.
OKLAHOMA CITY, OKLAHOMA

The female bladder is particularly vulnerable to bacterial invasion and subsequent inflammatory processes. Primary non-specific cystitis, an uncommon condition in the male, occurs so frequently in the female that few women reach the age of menopause without suffering from one or more attacks. Cystitis in the male is more often associated with either an upper urinary tract infection or inflammatory disease of the prostate.

This undue susceptibility to infection is doubtless dependent upon the female anatomy, i.e. a short patent urethra located in intimate relation to structures that normally harbor a multitude of organisms both pathogenic and non-pathogenic. These organisms under certain conditions may pass with comparative ease to the bladder. In addition secondary etiologic factors that tend to produce cystitis may include trauma to the urethra at intercourse and lack of careful personal hygiene following defecation.

In the past considerable emphasis has been placed on malposition of the uterus as a factor in producing bladder irritability. Because insufficient attention has been directed to the role of infection in the urethra and bladder as a cause for such symptoms, ill advised operative procedures have been recommended in the hope that relief may follow such surgery. In most instances bladder irritability in the female is due to infectious lesions either at the bladder neck or within the bladder itself and is not due to pressure on the bladder by diseased or displaced pelvic structures. Certainly no patient should be submitted to a gynecologic operation for the relief of frequency and pain at urination until a thorough examination has been made of the lower urinary tract to exclude chronic infectious processes or such pathologic changes as the so-called elusive or Hunner's ulcer of the bladder.

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Acute cystitis presents comparatively few diagnostic difficulties. It is important to emphasize that only the simplest diagnostic measures should be performed during an acute phase of cystitis. The physician should take a careful history in order to determine whether complicating factors such as: stones, tumors and hydronephroses which predispose to such infection, may be present. A careful inspection and examination should be made of the urethra as well as any expressed secretion in order to rule out the presence of an acute gonococcal infection. If there is no apparent contraindication a catheterized specimen of urine should be obtained and the centrifuged urinary sediment examined both as a wet smear and after it has been stained by Gram's method. As a rule no instrumental manipulation and especially no ureteral catheterization is advisable during the early acute phase of such an infection.

Under ideal conditions an X-ray plate of the patient's kidneys, ureters and bladder should be taken at this time but frequently financial reasons dictate a less expensive diagnostic course. One should not lose sight of the fact that the patient consults the physicians primarily for relief of the unpleasant symptoms and has a considerably lessened interest in possible complicating factors at that moment. Thus if a financial hardship is entailed by the correct diagnostic X-ray procedure it may be expedient to empirically rule out possible upper tract complications by observing the improvement obtained by standard therapeutic procedures.

Of paramount importance in the management of acute cystitis is the identification of the type of organism present in the urine. Stained smears by the Gram method of the well centrifuged urine sediment will ordinarily suffice for this purpose. Culture of the urine is desirable but in the majority of instances a carefully stained smear will be all that is necessary. The

method of making a Gram stain easily and rapidly is clearly described by Pelouze in his book. In making smears for bacteriologic diagnosis from urine the addition of a small amount of acetic acid will clarify those specimens cloudy with phosphates, without changing the morphology of the cellular elements other than to hemolyze the red blood cells.

In approximately 75 per cent of nonspecific urinary tract infections the offending organism will be the colon bacillus. In the properly stained smear these bacilli are short thick rods which take the Gram counter stain. A small percentage of these infections will be due to the proteus bacillus, an urea-splitting organism. Strongly alkaline urine with an ammoniacal odor is sugggestive of such infection. Gram positive bacilli are occasionally found and when discovered are due usually to contamination from the vulva and vaginal areas. The remaining 25 per cent of bladder infections will be caused by the staphlococcus and streptococcus group of organisms. Gram negative or Gram positive cocci in clumps or chains are not identified as easily as the colon group of organisms as they may be fewer in number and may be incorporated with the mucous and cellular debris of the smear. A type of coccus not infrequently found is the streptococcus fecalis. This is a rather large lancet shaped Gram positive diplococcus which has the peculiar clinical characteristic of producing an irritable bladder causing frequent and painful urination without an inflammatory reaction commensurate with the distress. As this particular type of infection necessitates a specific type of therapy, a cystitis which is due to both the streptococcus fecalis and a bacillus may require additional careful attention. Usual treatment may be followed by a rapid disappearance of the Bacilli in the urine but because of the Gram positive coccus there may be little or no improvement in the patient's symptoms.

A certain small percentage of bladder infections are due to the tubercle bacilli from an open tuberculosis of the kidney. Urinary tract tuberculosis should be suspected in every instance where the symptoms of cystitis are severe, constant and unresponsive to the ordinary therapeutic measures.

In the large majority of instances, bladder infections in the female present a satisfactory therapeutic response to our modern medication. Important, today, in combating this frequently found condition are four drugs: sulfanilamide, methenamine, mandelic acid and neosalvarsan. Sulfanilamide administered in doses of 30 to 80 grains daily rapidly produces satisfactory results in most of the bacillary infections. However, it is apparently less effective in inhibiting the growth of coccal infections. Sulfanilamide has the additional advantage of being non-irritating to the bladder wall and, therefore, may be prescribed in hyperacute inflammatory conditions. This is in contrast to the effect produced by methenamine which liberates formalin in an acid medium and in the bladder may cause irritation even to the point of producing a hematuria. Because of this methenamine has more therapeutic value in the more chronic phases of bladder infections.

Mandelic acid administered in appropriate doses and with careful attention paid to the hydrogen in concentration of the urine is an effective medication in bacillary infections. With the exception of the streptococcus fecalis mandelic acid is not an effective agent in the coccal infections. When used to combat the organisms for which they are indicated, both sulfanilamide and mandelic acid produce rapid amelioration of symptoms in practically all acute urinary tract infections. Examination of the urine microscopically or culturally will determine the length of time medication must be maintained.

Neoarsphenamine is indicated in the treatment of urinary tract infections when the offending organism is of the coccal type. Four to six doses of 0.3 Gms. to 0.45 Gms. of this drug intravenously five days apart will be followed by a high percentage of satisfactory results. In combating infections due to the streptococcus fecalis there are two effective therapeutic measures, namely, neoarsphenamine and mandelic acid.

For the sake of brevity no complete discussion is possible as to the various general indications and contraindications in the use of these drugs. The toxic reaction of sulfanilamide on the blood, the irritating effect of mandelic acid on the renal

parenchyma and the toxic systemic reactions due to neosalvarsan are factors that should be kept in mind. Judgement should always be exercised in any choice of medication and one important criterion to guide the physician is this—if the age, condition of the patient, urinalysis, or blood pressure indicates renal insufficiency reduce the usual dosage until it is possible to observe how. the patient tolerates the medication.

Therapeutic adjuncts other than urinary antiseptics in the treatment of acute infections of the bladder are the use of antispasmodics and sedatives. A prescription that has proven of palliative value is a mixture of Tr. opium and Tr. Bellodonna in an elixir of phenobarbital. Bed rest, if possible, is always advisable and in obstinate cases it may be an imperative measure. Irrigation and instillation of medicaments into the bladder for bactericidal effect, in general have been followed by disappointing results. In the past this was a common therapeutic procedure but with the advent of more potent bactericidal drugs this type of treatment has been found unnecessary.

Despite the short course of many acute infections of the bladder a chronic bacteruria frequently follows. Although evidence of a chronic inflammatory condition, such as pus cells in the urine may be absent and the patient may be free of symptoms, bacteria may still be present and will only be discovered if the careful routine examination includes a Gram stain of the centrifuged urine sediment. It is important for the physician to realize this and to persist in his treatment until all bacteria are completely eliminated as proven by either several microscopic examinations of the urinary sediment or by culture of the urine itself.

Unless such a completely satisfactory result is obtained and unless the possible contributing causes or foci are removed not only recurrences may be expected but more dangerous sequelae due to extension of the infecting organisms to adjacent and contiguous structures may result.

Examination of Contacts—A Factor in Syphilis Control

MACK I. SHANHOLTZ, M.D., C.P.H.
Director, Seminole County Health Unit
WEWOKA, OKLAHOMA

Since the time public health was in its infancy, the control of communicable disease has been recognized as a basic principle for the protection of a community. The health officer and his staff have been g r e a t l y interested in the isolation and quarantine of the infectious person. Epidemiological ingestigation as to the cause or the source of the disease and the prevention of further spread or the occurence of secondary cases have been stressed. This has been a factor in bringing about the great reduction over the past 20 years in many of our common communicable diseases.

Needless to say, these procedures and investigations have been used very sparingly in the control of syphilis. And still syphilis is one of the communicable diseases and perhaps our No. 1 health problem today. It is amenable to treatment and public health management.

We f u l l y realize that the community should be protected against the early infectious case himself, as well as his source and his contacts. Why, then, hasn't there been more stress put on the practical epidemiology and the c o n t r o l of syphilis? Many obstacles peculiar to the disease itself must be overcome. In general, there has been and still is gross neglect on the part of the practicing physicians in reporting the disease to health authorities. The disease has been so camouflaged in secrecy

and taboos that the doctors have not felt justified in even divulging its whereabouts to health departments. In the early stages of the disease, the patient feels so well generally that quarantine other than by confinement in an institution is impossible. We know from the estimated prevalence of the disease today that an institutional quarantine of all early cases would be impracticable. How, then, can the spread of the infection be checked?

We have one available effective method and that is "chemical quarantine," or regular and adequate treatment of the early infectious case. If these cases are found and put under adequate and regular treatment, they are no longer a menace or source of spread. One excellent method of uncovering these early cases is to examine all antecedent and subsequent contacts of every known early case of syphilis which is under supervision. This has been recognized as a sound method of practical epidemiology in syphilis ever since the pioneer work in 1933 as carried out by Smith and Brumfield.

This work was carried out at the University of Virginia Hospital and published in the J. A. M. A. Their original 119 cases named 196 contacts, of whom 93 were examined. Seventy-four of these 93 were found to be syphilitic. You will notice that only 47 per cent of the contacts named were brought in for examination. Although this work was remarkable from the standpoint of its being one of the first practical approaches to the problem as well as the actual accomplishments, the percentage of the named contacts examined is not high according to present day standards. The reason for this was a lack of sufficient field workers at that time to carry out the follow up work, and in their place letters were substituted for the most part. Today, this same clinic is working on a cooperative basis with a special United States Public Health Syphilis Unit, which should make follow up work on contacts more efficient.

A similar study to that of Smith and Brumfield was carried out by Clark in Brooklyn. Recently, Levinson of the New York Health Department made an investigation of selected cases for determining the efficiency of contact examination as a means of finding early cases. Although his figures were not large enough to be significant, the results were favorable.

The follow up work and examination of contacts is recognized by syphilologists and public health people alike as one of our most effective weapons in control. It is the keystone in the syphilis control program which is usually given under three heads: 1. education; 2. investigation; 3. treatment.

Due to the nation wide publicity campaign, put on for the most part through the efforts of Surgeon General Parran, the educational program is, in my opinion, far ahead of the other two. The effect it has had on the public in general is quite evident to those doing work in syphilis. It used to be startling to a new patient to hear about the serious after-effects the disease was capable of producing and the long course of treatment required for a cure. Today, this is not news to many patients because they have already been enlightened. The doctor who still believes six treatments sufficient for cure (we still have a few remaining) can expect his patients soon to come back with some such answer as "Quit your kidding, doc! I know it takes 70 treatments to cure me." If he fails to take a blood test on one of his prenatal cases, he can expect her to remind him that she wants one.

The advance made in treatment is greater than that in epidemiology or case investigation. Practicing physicians are taking more interest in treating more patients, many of whom are reporting for treatment on account of the above mentioned educational drive. Numerous clinics conducted by health departments are springing up all over the country for treatment of indigent cases, but they are too few in number in most localities to cope with the problem. In my opinion, there never will be any noticeable reduction in the prevalence of syphilis until there is a coordination and a marked advance made in both treatment and investigating facilities, since one is useless without the other. Free clinics for those who can not pay, and enough field workers to carry out case investigation for the clinic as well as for the practicing physicians in the community are essential. The family doctor does not have a field worker or the time, and perhaps the inclination, to do this himself.

However, the majority of them would welcome a competent worker to do this for him.

I believe that for the effective control of syphilis there should be some government agency responsible for treating indigent cases and for doing follow up work on patients of private physicians. The most logical organization to carry out this work is the county or city health department. Some reorganization of present health departments, and the establishment of many new ones would be necessary for efficient handling of the problem. The health officers and nurses in the departments understand syphilis and the means of preventing its spread.

Much tact and ingenuity is required to get a patient to name all his contacts in many instances, and health officers become very adept at this procedure. The public health nurse is the logical one to do the follow up work because she already knows many of the families in her district and has gained their confidence. For the most part, she would have little or no trouble in getting family contacts in for examination because she can go about this in the same manner she would in getting a child in for toxoid or other routine procedures. This, I believe, is much better than sending a contact worker who depends on force or fear as a means of getting people in. Force or fear can be used occasionally when it becomes absolutely necessary, but shouldn't have to be used often.

Anyone doing contact work should have a basic knowledge of the disease itself such as its incubation period, the time interval between the three stages, its mode of spread, and treatment methods. With the knowledge any registered nurse has of disease in general, a little special training which could be received in short courses or conferences would make it possible for her to develop into a very efficient field worker for syphilis contacts.

It will be necessary to have every town and county served by some organized agency responsible for the control of syphilis, and these organizations must cooperate with each other. The contacts of a patient in one county may live in another district, and if the workers in one area will notify other organizations of contacts in their district, all contacts can be found and brought in for examination and treatment if necessary. This has worked out well in Seminole, Pontotoc, and Okfuskee counties. When a patient under treatment moves from one of these counties to another, the record of his treatment is sent to the county health department where he has moved, and treatment can be continued without a lapse. Such organizations and cooperation are necessary if there is to be any marked reduction in the disease in general.

Summary

1. Contact investigation is an important procedure in the control of syhpilis.

2. The county and city health departments are the logical organizations to take responsibility for the control of syphilis.

3. There is a need for an expansion or development of more health departments so as to cover the spread completely.

4. We can't hope to see any marked reduction in the prevalence of syphilis until such organizations are established. They can co-ordinate education, investigation, and treatment of the disease.

* * * *

Discussion

Dr. G. W. McDonald, Ada: I greatly enjoyed Dr. Shanholtz's presentation of this paper, and I feel that it touches on a subject which is very important to the Public Health control of syphilis.

It is surprising that a program so well founded and productive of such great good has not received its just share in the annals of Medical Literature. As to the relative importance of the three points in the control of syphilis mentioned by Dr. Shanholtz, namely, education, treatment and investigation, I feel no more emphasis can be placed on one than the others. It would be as wise to ask which of the legs of a three-legged stool is most important. As with the stools, no two are effective without the third. The firm foundation of syphilis control must rest with equal burden on each of its three components. Yet as Dr. Shanholtz says investigation has been the most greatly neglected of the three. All of you who have treated syphilis, have, I feel, sooner or later, come to realize that even the most complete care is bound to be in many cases fraught with dangers and disappointments. When we

see these patients, even those who have been very religious in their regularity, and on whom we have spent many hours of study and labor, develop, in spite of our most valiant efforts, muco-cutaneous relapse, neurological symptoms, etc., it occurs to us beyond all doubt the greatest tribute we can make to the health of our communities is the prevention of syphilis rather than its treatment. Here, if ever, an ounce of prevention is worth many pounds of cure.

The treatment of syphilis at best is a patch-up job and the prevention of one case through epidemiological investigation of source and spread contacts is worth more than ten so-called cures.

I feel that these investigations can be made and definite results secured even with a minimum staff. To illustrate this may I present a small series which has come to light in Pontotoc county.

On routine visits to the county jail we found a man then in active secondary stage and a healing chancre. He was being held for performing an abortion on a young lady. His previous occupation had been that of fortune teller and had probably done abortions on numerous occasions. On inquiry into his sexual history for the past three months he gave a history of sexual contact with eight women. These women were contacted as soon as possible, and it was found, on examination immediately, that three had positive blood and were in early primary stage. They had had no other sexual contacts. Another refused examination but it was found later that she had gone to her private physician who reported to us that she was found to have primary sores and was being treated by him. Another was found to have had irregular treatment during the past six months from her private physician. Since this was the only case whose duration was longer than that of the fortune teller's it is surmised that this is the source of his infection.

Three other girls were found negative, both on physical examination and blood Wassermans. Several times since that time attempts have been made to get these girls for re-examination but it was found that two of them had been out of the county.

Recently there came to our office a man with an early chancre who gave as his only contact one of the girls who had been negative on her first examination. She was immediately sent for but was at that time living in Fort Smith, Ark. Being acquainted with the health officer in Fort Smith I wrote to him telling of the circumstances of the case. A few days later I received a reply saying the girl had been located, Wasserman taken and that she had early secondaries, for which treatment was instituted. Since then she has returned to us for continued treatment.

The interesting thing about this is that this girl is the only one of this series known to have transmitted the disease to a third person, all other contacts having treatment instituted before other sexual contacts were made.

We are making an attempt at this time to locate the two remaining contacts who were negative on their first examination, to determine whether subsequently they have shown evidence of the disease.

This series, while shorter than some I have seen, demonstrates several factors:

First—that epidemiological investigations are productive of good results even when carried on by health units of minimum staffs.

Second—it is not at all difficult to stimulate patients to give their contacts.

Third—contacts can be rounded up, examined and put under treatment before a great number of other healthy persons have been exposed. Thus cutting down the case load in any given community.

Fourth—it demonstrates to a great degree the necessity of such control measures in all surrounding areas. Many times contacts are given which, because of their geographical location are beyond jurisdiction of the local health unit, or because of the distance, travel to such contacts by the personnel of the local unit is economically unsound. In these cases it is of distinct value to both communities that a liason may be established with other health units to the end that names and addresses of contacts may be referred from one to the other.

It is my sincere hope that this paper of Dr. Shanholtz's will stimulate greater efforts in the investigation work among

those health units already in the field and that the possibilities of productive, cooperative effort of several health units may stimulate the formation of new units.

I feel that a complete coverage of Oklahoma with active health units is the greatest hope for the effective control of syphilis in the state.

The Emergency Treatment of Airplane Injuries

ROY L. FISHER, B.S., M.D., F.A.C.S.
FREDERICK, OKLAHOMA

I have nothing new or spectacular to offer in this paper. After all, a major fracture presents the same problems regardless of the manner in which it occurs. Airplane injuries probably differ from injuries received in other modes of transportation in that they are more apt to be multiple and extremely serious in nature. I might add that head injuries and fractures of the spine are probably more frequent also.

Airplane crashes, when they occur, may be in out of the way places in rough terrain or close to airports and thickly populated centers, all of which have a direct bearing on the emergency treatment of the injured occupants. Without reservation it may be stated, that it is better to transport the doctor to the patient instead of transporting the patient to the doctor for the emergency treatment of these injuries. In the Military Service medical officers travel to the scene of the accident by air whenever it is possible to do so. In this manner a Flight Surgeon can often reach a crash within 15 or 20 minutes, whereas, if he depended on ground transportation an hour and sometimes much longer periods of time would be required. In general it may be said that every two hours delay means an extra week in the hospital. In the San Antonio area we have more accidents than any other section in the United States because this is our Air Corps training center. Flight Surgeons and well equipped ambulances are kept on the flying line during all training periods. The importance of a Flight Surgeon's presence at the scene of a crash as soon as it is humanly possible to get there cannot be over-emphasized. Army ambulances located in the training area are equipped with radio receivers. When a crash occurs some distance from one of the fields, it is first located by airplane. When the pilot or observer locates the crash they guide the ambulance to the scene by radio instructions via the shortest possible route. This is especially helpful and time saving in sections of the country where section lines are not laid out and terrain is rough and thickly wooded. In the event of the failure of a radio set, the pilot can still guide the ambulance to its destination by pre-arranged signals such as dropping a left wing for left turn and right wing for a turn to the right, etc. The ambulances are easily distinguishable from the air by the O. D. coloring and markings.

In the new metal ships in use today, both commercial and service types, crashes are very often fatal. Gross weights are much greater due to the increase in the size of the ships and engines. They are well streamlined and wing loading is heavy, with the result that when they do crash they hit hard and fast as compared to the older fabric type, with large wing span and much less gross weight. A metal ship falling any distance at all is almost sure to prove fatal to its occupants. Accidents are much less frequent, however, because the equipment and engines of today are highly efficient.

The fire hazard is less also. Engines are improved. Magnetos have replaced batteries doing away with battery sparks from broken terminals and short exhaust stacks have replaced the old long type which has reduced fire hazard 50 per cent alone. When fire does occur it is in

practically an explosive manner and will usually be at intense heat within 30 seconds, before even close observers can get near the ship. To combat this factor army airdromes have fire trucks, chemicals, asbestos suits and crash kits, all manned by trained personnel. However, because of the fact that the fire is a gasoline type, and extremely explosive, even these precautions have proven of very little value.

If the accident has been of a non-fatal nature and the victim is unable to get out himself, the first problem and a most important one, is to extricate him from the plane without inflicting further injury. This is where the average layman falls down and may acutally do more injury to the victim than the crash itself. To get the occupant out of the plane it is often necessary to cut away parts of the fuselage. This is done with heavy wire cutters, hacksaws and ordinary axes.

Experiments at Wright Field on old ships have proven that an axe is probably the best tool to cut through supporting members when it can be used without danger of striking the injured occupant. The crash kit carried by all army ambulances and kept in readiness at all Air Corps stations consists of the following pieces of equipment:

Flash lights, fire extinguishers, grappling hook with steel cable, bolt cutters, wire cutters, pipe cutters, hacksaws, axe, sledge hammer, crowbar, metal snips and dirk knife.

When ships nose over, trenching beneath the ship with picks and shovels is sometimes necessary in order to reach the occupants. If ordinary cutting away of parts or trenching beneath the airplane will not extricate the injured, it is better to wait until a wrecking crew arrives with the necessary tripods and block and tackle equipment with which to raise the ship or to move its position so that successful removal of the occupants can be accomplished.

The emergency treatment of airplane injuries consists of five factors which are as follows:

1. Shock treatment.
2. Control of hemorrhage.
3. Proper splinting of all fractures.
4. Dressing of all wounds.
5. Proper transportation to hospitals.

Treatment of Shock

Shock is always present in these injuries varying in degree depending on the type of injury and upon the individual. Certain people are more likely to be shocked than others. They seem to react more readily to the causes of shock. Conditions that may produce profound shock in some people may cause but little disturbance in others. The army believes in the administration of morphine in adequate dosage as the first procedure in the treatment of shock. All army ambulances carry morphine, thermal pads of the chemical type, to provide heat, plenty of woolen blankets and all other accepted stimulants. Morphine in sufficient dosage to control pain and insure rest, plenty of blankets and thermal pads to maintain body heat and warmth is probably the best emergency treatment.

Control of Hemorrhage

Hemorrhage and shock are often closely allied, and the trinity of hemorrhage, shock and infection is a formidable combination. The liability of hemorrhage to emerge into shock must always be borne in mind. Any hemorrhage, unless it be internal, can be controlled in the vast majority of cases by keeping cool and using common sense. If the bleeding is coming from one point, pressure can be made with a sterile pledget of gauze and gradually withdrawn until the bleeding point is located, clamped and then secured by ligature if possible. If the bleeding comes from several points and if sudden and profuse, pack with sterile gauze and make adequate pressure until it is checked. If the packing can be slowly removed and the individual bleeding points picked up and sutured do so, if not, leave the packing alone. Avoid always the blind application of a clamp. If necessary, in severe bleeding from an extremity, apply a tourniquet to control the vessel until it can be picked up and ligated. In badly mangled limbs tissue resistance is always low and a tourniquet should not be left on any longer than absolutely necessary. Depriving these tissues of blood for a period of an hour or more is a serious handicap in the healing of the wound and if a careful clamping of the individual vessels can be done, the eventual results will be much better.

Proper Splinting of All Fractures

Major fractures of the extremities which will require immobilization for transportation are usually obvious and determination of the details of the fracture does not fall under the head of emergency treatment and should be deferred until the patient is hospitalized where definite treatment is instituted.

Major fractures must be properly splinted before a patient is transported because the movement of the fragments causes severe pain, damages surrounding tissues, may convert closed fractures into open ones, increases hemorrhage and shock and causes death. It was for these reasons that the wounded were first splinted on the battlefields by the various armies during the World War. It has been stated by Army Surgeons that the routine application of the Thomas splint on the field reduced the mortality from 80 per cent to 20 per cent in gunshot fractures of the femur. Today the Thomas splint is still ideal for immobilization of fractures of the extremities and if available should always be used. All army ambulances carry a supply of these splints as well as a wire litter which is also ideal.

As is usually the case in commercial or civilian plane crashes, Thomas splints are not available. This does not justify the prevailing tendency to dump a patient into an automobile and rush him several miles to the nearest doctor's office, drugstore or farmhouse adding insult to injury when the patient may be dying of shock. It is much better to cover severely injured patients with blankets allowing them to lie on the ground until they can be splinted properly and moved in a suitable ambulance. All major fractures can be sufficiently immobilized for emergency transportation by means of simple board splints and boards are always available somewhere nearby.

In fractures of the spine or pelvis the ladder splint is very efficient. It consists of two long boards which are fastened together by three cross pieces. If hammer and nails are not available the cross pieces can be tied on. The splint is padded with any material available and the patient is bound to it. This also serves as a litter and is useful for patients with internal injuries. In simple fractures of the clavicle all that is necessary is to place the arm in a triangular sling. In severe injuries in the region of the shoulder a pad should be placed in the axilla and the arm immobilized against the chest with the forearm and hand in a sling. Fractures of the lower humerus and elbow region can be immobilized by two boards, the one on the inside extending from the axilla to the finger tips and the one on the outer aspect from the shoulder to the finger tips. Further immobilization can be secured by binding the arm to the side. Forearm fractures and fractures of the wrist can be immobilized in dorsal and volar splints extending beyond the elbow to prevent rotation and the forearm placed in a triangular sling.

In fractures of the hip, shaft of the femur and knee it is necessary to immobilize the lower extremity and the trunk. A certain amount of immobilization can be secured by binding the two lower extremities together but it is best to use two b o a r d splints, a short one extending from the crotch to the foot and a long board extending on the outside from the axilla to the foot. Rotation is prevented by tying the foot to the splint. In fractures below the knee it is desirable to include the thigh, using two boards long enough for this purpose in the usual manner. A pillow also makes a comfortable and efficient splint.

In fractures of the skull the best emergency treatment is the treatment for shock, that is morphine and plenty of blankets. Here again waiting for a properly equipped ambulance, r a t h e r than using the first passing automobile will often be a life saving procedure. No attempt should be made to reduce fractures of the nose at the scene of the accident. Bleeding can be controlled by packing the nose and this should suffice until the patient is hospitalized. Fractures of the mandible are equally important. Immobilizing the mandible against the upper jaw with adhesive or a bandage is all that is necessary for a temporary splint.

Dressing of Wounds

In facial injuries the hasty "emergency care" usually given these victims often jeopardizes the possibility of a good end result. Hurried closure of wounds with skin clips and heavy suture material is to

be condemned. Hemostasis and a sterile dressing at the scene of the accident is sufficient. Surgical repair should not be attempted until it can be done properly under conditions that will leave a minimal scar. Facial disfigurements are a source of great mental anguish and not infrequently engender psychologic handicaps that ruin social and business careers, so let's prevent them whenever possible. In severe bleeding from the mouth be sure to examine the tongue because the source very often is a deep laceration of this organ requiring immediate suture.

The emergency treatment of lacerations regardless of location is hemostasis and sterile dressings, to prevent further entrance of dirt. The treatment of compound fractures begins at the scene of the accident with hemostasis, sterile dressings and proper splinting. In the emergency treatment of burns, morphine for the control of pain, sterile dressings applied to the burned areas and blankets to keep the patient warm will probably be all you can do. I shall make no attempt to discuss the various methods advocated for the treatment of burns except to condemn the use of grease base ointments as an emergency dressing applied on a denuded area already potentially infected.

Proper Transportation

It is much better to leave the patient at the scene of the crash under improvised s h e l t e r, after emergency treatment has been given than to improperly transport him to a hospital in a poor conveyance. Whenever possible wait for a good ambulance with l i t t e r s, plenty of s p l i n t s, blankets, thermal pads and other necessary equipment. Don't put him hastily into any kind of a car and rush him madly at breakneck speeds over any kind of roads to the hospital. In observing this precaution you may save a life. The army has proven beyond a doubt the value of the airplane ambulance. It has saved many lives because of the speed and ease in which injured patients can be transported long distances. Airplane ambulances are kept in readiness today at strategic points throughout the United States by the Air Corps.

An interesting story in connection with the development of the airplane ambulance by the army was related to me recently by Major T. L. Gilbert, the Commanding Officer of the Air Corps Reserve Unit located in this city, which was as follows: Several years ago when engines lacked the reliability of present day power plants, forced landings were not at all uncommon. If engine failure occurred over rough country the pilot could not jump and leave his p a t i e n t in the ship so a method had to be developed to parachute the patient safely to earth in order that both their lives would be spared. Major Gilbert was one of the officers assigned to work out a successful method that would take care of such a situation. They constructed a litter similar to the one shown you with heavy straps fastening the patient securely on the inside.

They next devised a parachute that was attached to the litter and that would open automatically when it cleared the ship, a drop of about 10 feet. They strapped a dummy weighing 150 pounds in the litter and made many drop tests. In each test the dummy strapped securely in the litter floated lightly to earth. The litter was pushed out feet first and as soon as the chute opened the litter floated to the earth in a horizontal position, landing lightly.

Summary

1. Injuries are usually m u l t i p l e and serious and our main concern is to save a life.
2. Start first-aid immediately on reaching the patient. Morphine can be given, hemorrhage o f t e n controlled and sometimes splints can be applied while help is working to extricate the patient from the plane.
3. Use all supportive measures at hand.
4. Control hemorrhage.
5. Cover all wounds with sterile dressings to prevent further contamination.
6. Splint them where they lie.
7. Provide proper transportation.

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EDITORIAL

HOSPITAL INSURANCE

In many localities throughout the state there have been organized companies for the purpose of furnishing hospitalization. These companies have been of various sorts, some organized on a non-profit basis, some as mutuals and others incorporated for profit to the stock holders.

There has been some controversy as to the attitude of organized medicine toward the whole program and in certain localities where physicians have been interested in the organization there has been some question as to ethics.

It appears to the editor that the solution of the problem is very simple and that a few general principles can govern these organizations making them acceptable so far as organized medicine is concerned.

First: There should be a free choice of hospital. If this is not the case, in privately operated hospitals or those with a closed staff the selling of hospital insurance would amount to the selling of the professional service of the physician or surgeon connected with the hospital. In all policies no hospital should be given the preference as to rate or service furnished, each must have the same status and receive the same compensation.

Second: No professional service should be covered by the policy. Hospital service only, this to include room, board, nursing service, operating room service, medicines, dressings, et cetera. No professional service, this should include laboratory, X-ray and anesthetic service. This to conform to the action of our House of Delegates.

There are advantages to the Doctors of the State in Hospitalization Insurance and it would be well for the physicians to encourage such a movement if the above mentioned principles are carefully kept in mind.

INSURANCE PROGRAM

Life insurance is thoroughly recognized as the most rapid and safest method of developing an estate, especially is this true with the physician who, all too often, has poor business judgment and lacks the time to make the necessary investigation of financial investment. Old Line Insurance Companies (those financially sound) offer to us their facilities for investing and all pay a reasonable rate of interest and in most instances more than can be secured at the banks on time deposit or from the Government on bonds.

The one feature is the rapidity of developing an estate for as soon as one premium is paid and the policy delivered the estate is i n c r e a s e d, in case of death, by the amount of the face of the policy and by the end of the second policy year there has developed a real money value besides the protection afforded.

The problem before the insured after acquiring the insurance is the development of an Insurance Program.

Money left in a lump sum to your beneficiary is apt to be poorly invested or foolishly expended and this leaves your family without financial security which you may think has been provided.

The money for maintainence or perhaps education of your children has been squandered and the result you felt sure of can not be attained.

The method of avoiding this disaster is to so develop a program that the lump sum will be sufficient to meet the obligations of one's last illness, burial and other debts, the balance of the policy to be paid in annuities at stated intervals and if there are children to educate, separate allowance can be made for such a purpose.

All the details of a good insurance program cannot be considered here; however, your insurance agent should be a specialist in this subject and can suggest to you all the necessary details so that the money you are now investing in premiums may come back to your beneficiaries so distributed as to accomplish the most good and thus fulfill your ambitions in an effort to properly protect and care for your loved ones after you are gone.

ON THE QUESTION OF ADVISING THE YOUTH ABOUT THE PRACTICE OF MEDICINE AS A VOCATION

There has been a tendency, and for very good reasons, to discourage young men from studying medicine. Many doctors who have sons have advised them against medicine as a career. This has largely been brought about by the spector of socialization of medicine. The marked trend toward state medicine has painted the picture of the future doctor as one with a lower income, a lack of individual privileges in his practice and a lowering of the standards of living for the future. There is plenty evidence to support such a picture. Also discouraging is the fact that approximately one-third to one-fourth of the men completing their pre-medic course can not be admitted to medical schools on account of the limited admitted number in the class and lack of facilities of caring for more and the over crowding of the profession.

However, to offset this, is one bright star on the horizon which shows that all of the future is not gloomy. Two hundred and forty-three leading foundations now give annually a total of $38,500,000 toward medicine and public health education, outranking all other educational benefits. During 1937, last year for which figures are available, purposes relating to medicine and public health benefitted to the extent of $13,495,898, while education, in second place, received $9,170,318. These figures reveal more than appears on the surface. In the first place it would indicate that vast funds are available for properly conducted research work and for more advanced training in the study of medicine. What is more important is that the American public is sufficiently health conscious to make these funds available and are sufficiently interested that it is doubtful the public will ever permit any lowering of standards of medical practice by accepting compulsory socialization of medicine.

—A. Ray Wiley, M.D.

USE OF LAXATIVES

Nearly every 15 minutes there comes over the radio some misinformation relative to the use of cathartics. This is so constantly kept before the lay public that our population is rapidly developing the cathartic habit which of course is increasing the sales of the numerous products advertised thus fulfilling the purpose of the vast expenditures by the purveyors of such preparations.

The harm that is being done can be seen by the family physician of the country. One never hears the dangers spoken of, it is never mentioned that cathartics should never be administered in the presence of abdominal pain, the listening public is never told of the dangers and complications in acute appendicitis when laxatives are taken.

Now you may ask, what can be done about it? And the answer is that the medical profession must make a campaign in an effort to overcome the terrible effects of this malignant advertising, bring to our people the truth relative to the danger of cathartics under certain circumstances.

In the State of Pennsylvania the Medical Association made a very strenuous

campaign in an effort to lower the mortality from appendicitis and the principal note was avoidance of the use of cathartics in the presence of abdominal pain. Stickers were prepared to be used on monthly statements and letters telling of this danger. Perhaps something could be done by us to offset the misinformation placed before the public both in print and over the radio.

A.M.A. INDICTMENT QUASHED!

Justice James M. Proctor, upholding a defense demurrer to indictments, ruled on July 26 that the American Medical Association and its fellow defendants were not engaged in a trade as defined by the anti-monopoly statutes. Counsel for the doctors had contended their activities could not be governed by the Antitrust Law, that they were engaged in a "learned profession" rather than a trade. On December 20, 1938, a District of Columbia Grand Jury, acting on evidence presented by the Justice Department, indicted the American Medical Association, the Medical Society of the District of Columbia, the Washington Academy of Surgery, the Harris County (Texas) Medical Society and 21 individual physicians for violation of the Sherman Antitrust Law. These organizations and individuals, the indictment read, were "engaged in a continuing combination in conspiracy in restraint" of trade in hampering the activities of Group Health Association, Inc., for the District of Columbia, an organization established in 1937 to hire physicians and nurses and provide hospital care on a cooperative basis to government employees. Defense attorneys had contended that all their clients' activities were directed solely at the maintenance of the ethics and standards of the profession.

At the headquarters of the Association, officials, including Dr. Olin West, Secretary, and Dr. Morris Fishbein, Editor, said:

"The principles and policies of the American Medical Association do not forbid nor have they ever contemplated any opposition to a well considered expanded program of medical service, when the need can be established; neither is there any fundamental principle or policy which in any manner opposes aid to the indigent when indigence can be established.

"The American Medical Association has always welcomed investigation by any authorized agency of the nature of its organization or of the conduct of its work or of its activities, firmly reliant in the belief that every action taken by the Association has been in accordance with its constitutional organization in the interests of the public welfare for advancing standards and quality of medical service for the American people; and that at no time has it violated the established law of the federal, state, or municipal governments of this country. Moreover, by the very nature of its organization, it has preserved constantly the democratic principles on which the Government of the United States is founded and maintained."

Editorial Notes—Personal and General

The Fite Clinic, Muskogee, will be located, after September 1, 1939, on the seventh floor of the Commercial National building. Dr. William Henry Doyle is added to the staff in the department of dermatology and syphilology and associated radium and X-ray therapy.

DR. J. F. PARK, McAlester, is in England. He will attend clinics in London and in Edinburgh during his absence of some six weeks.

DR. HUGH H. MONROE of Lindsay has been appointed as county health superintendent of Garvin county. Dr. Monroe's appointment was effective as of June 28.

DR. GRADY MATHEWS has announced the appointment of DR. F. R. HASSLER as county health superintendent of Pottawatomie county. Dr. Hassler took over his new position July 15.

DR. N. ROBERT DRUMMOND has recently become an associate with DR. GEORGE H. KIMBALL of Oklahoma City. Dr. Drummond's internship was served at University Hospital and for the past year he has served as resident at St. Anthony Hospital.

DR. W. B. DAVIS of Stroud who recently underwent an appendix operation is convalescing at the Rollins Hospital, Prague, Oklahoma.

DR. JAS. L. SCHULER of Durant has formed a partnership with DR. P. B. RICE formerly of Oklahoma City. The new firm will be known as the "Schuler-Rice Clinic." Dr. Rice is a graduate of the University of Oklahoma Medical School and recently completed his internship at the Oklahoma City General Hospital.

DR. JAMES S. PETTY of Guthrie has been elected the new Chairman of the Medical Staff of the Cimarron Valley Wesley Hospital. Other elected officers are: Dr. Wm. C. Miller and Dr. P. B. Gardner.

DR. NED BURLESON of Prague is busily studying the Manual of Arms having recently enlisted in the Medical Corps of the National Guard.

The Valley View Hospital of Ada recently celebrated its first anniversary. Since its opening the hospital has treated patients from 17 states outside of Oklahoma and many other counties outside of Pontotoc county. Valley View Hospital is to be complimented on the fine service it has rendered during its first year of operation.

DR. C. P. BONDURANT of Oklahoma City was one of the winners in the contest sponsored by the Daily Oklahoman & Times for amateur photographers. Dr. Bondurant won first in the Facial Study Class.

DR. and MRS. F. T. BARTHELD, of McAlester, have returned from an eastern trip, including a visit to the World's Fair.

DR. and MRS. J. B. LAMPTON and their daughter, Judith, of Sapulpa spent the month of June in Philadelphia where Dr. Lampton did post-graduate work at the Pennsylvania Hospital.

DR. W. C. TISDAL who until recently was superintendent of the Western Tuberculosis Sanatorium at Clinton, has entered private practice in that city and will be associated with DR. PAUL LINGENFELTER.

DR. T. W. PRATT, who recently completed his internship at University Hospital, has established his practice in Cheyenne, Oklahoma.

Oklahoma Doctor Honored

DR. L. J. MOORMAN of Oklahoma City has recently been honored by the American Trudeau Society by being selected as its President-Elect. Dr. Moorman will serve during 1940-41. He has, in the past, served organized medicine as President of the Oklahoma State Medical Association, the Southern Medical Association and is at the present time a member of the Editorial Board of the Oklahoma State Medical Journal.

Iron Lung for Western Oklahoma

Western Oklahoma is fortunate, indeed, in having in that part of the state an American Legion group progressive and farseeing enough to give to the communities they serve the facilities of the latest advancement in modern medical science. The American Legion units of the 6th, 7th and 8th Districts have recently purchased two new type iron lungs, one for adult use and one for infant use. The lungs will be placed in the Western Oklahoma Charity Hospital at Clinton. Governor Leon C. Phillips and Lieut. Governor James E. Berry were present at the dedication ceremonies.

The Package Library

The Library of the American Medical Association has collected published material, in the form of reprints and pages from periodicals, on many phases of medicine and surgery. This material will be loaned to members of the Association or to **individual** subscribers to its publications for a small charge. The collection does not contain articles in foreign languages, or articles on highly specialized topics, but these may be supplied when especially requested.

Following is the list of rules governing the package library:

1. The service is supplied only to members of the Association and to **individual** subscribers to its periodicals.

2. Requests for packages must be in writing and should be addressed "Library, American Medical Association."

3. Only one package may be borrowed at one time.

4. Twenty-five cents in stamps must be enclosed to cover postage and part of expense of collecting the material. THIS SHOULD NOT BE ENCLOSED IN THE PACKAGE BUT SHOULD BE SENT UNDER SEPARATE COVER.

5. Packages must not be kept longer than six days.

6. Packages, or items contained therein, that are lost can be replaced, if at all, only by the purchase of some or all of the lost items. The actual cost of replacing such items must be borne by the borrower.

7. When returning the package, tear off the slip sent with package and paste on wrapper. Please notify The Library, American Medical Association, 535 N. Dearborn St.—postal card is sufficient—when the package is mailed back.

Examinations American Board of Obstetrics and Gynecology

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 6, 1940, at 2:00 P.M. The Board announces that it will hold only one Group B, Part I, examination this year prior to the final general examination (Part II), instead of two as in former years. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1940.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10, and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Applications for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1940.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I examinations (written paper and case records) and the Part II examinations (pathological and oral).

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

The American Can Company has available to the physicians of Oklahoma their recent publication "The Canned Food Reference Manual." This manual was compiled by the Nutrition Research Laboratory of the American Can Company and presents interesting data on conservation of food essentials, dietary requirements, nutritional and public health aspects of canned foods, canning procedure as well as a wealth of other authoritative material. Should you care to receive this manual correspond with the American Can Company, 230 Park Avenue, New York City, N. Y.

Oklahoma City Clinical Society, 1939 Meeting

The time is now appropriate to call attention to the forthcoming meeting of the Oklahoma City Clinical Society. As every Oklahoma physician knows, this meeting was omitted last fall in deference to the Southern Medical Association. The committees have been busy however, and are all set to put on a program this fall second to none. From far and near have come compliments and congratulations to the Oklahoma City group for the splendid organization they have maintained through the lean years of the depression. Each succeeding year the meeting has grown greater and better, and from the plans which have been made known to us thus far, the program for 1939 will be the best yet.

Speakers who will appear on the program are as follows:

Dr. Rock Sleyster, Wauwatosa, Wisconsin—President of American Medical Association; psychiatrist.

Dr. Albert H. Aldridge, New York, New York; obstetrics.

Dr. Edgar G. Ballenger, Atlanta, Georgia; urology.

Dr. Lewellys F. Barker, Baltimore, Maryland, internal medicine.

Dr. Lowell S. Goin, Los Angeles, California; roentgenology.

Dr. Harry S. Gradle, Chicago, Illinois; ophthalmology.

Dr. John A. Kolmer, Philadelphia, Pennsylvania; pathology.

Dr. Frank H. Lahey, Boston, Massachusetts; surgery.

Dr. Joe V. Meigs, Boston, Massachusetts; gynecology.

Dr. A. Graeme Mitchell, Cincinnati, Ohio; pediatrics.

Dr. Emil Novak, Baltimore, Maryland; endocrinology-gynecology.

Dr. Hobart A. Reimann, Philadelphia, Pennsylvania; internal medicine.

Dr. Erwin R. Schmidt, Madison, Wisconsin; surgery.

Dr. Herman C. Schumm, Milwaukee, Wisconsin; orthopedics.

Dr. Marion B. Sulzberger, New York, New York; dermatology.

Dr. William A. Wagner, New Orleans, Louisiana; otolaryngology.

Every practitioner in Oklahoma should make his plans to attend all or part of a program featuring such a magnificent array of talent. Don't forget the dates, October 30, 31 and November 1 and 2.

Try Pablum On Your Vacation

Vacations are too often a vacation from protective foods. For optimum benefits a vacation should furnish optimum nutrition as well as relaxation, yet actually this is the time when many persons go on a spree of refined carbohydrates. Pablum is a food that "goes good" on camping trips and at the same time supplies an abundance of calcium, phosphorus, iron, and vitamins B and G. It can be prepared in a minute, **without cooking**, as a breakfast dish or used as a flour to increase the mineral and vitamin values of staple recipes. Packed dry, Pablum is light to carry, requires no refrigeration. Easy-to-fix Pablum recipes and samples are available to physicians who request them from Mead Johnson & Company, Evansville, Ind.

New Books

DISEASES OF THE NOSE AND THROAT; by Dr. Charles J. Imperatori and Dr. Herman J. Burman. Published by J. B. Lippincott Company, Philadelphia. Price, $7.00.

The second edition of this work follows the same instructive plan as in the first edition. The material in this book is arranged somewhat differently than the ordinary manner. The book is written in more or less of outline form. The symptoms, diagnosis and treatment is considered first followed by the pathology. The treatment is considered in its infinite detail and I believe it is well presented. The illustrations of the methods of procedure of the examination and operative treatment are numerous and fine as to detail.

The second edition contains newer phases of allergy related to otolaryngology as well as a discussion of many other diseases not included in the previous edition.

"OPERATIVE ORTHOPEDICS" (First Edition): by Willis C. Campbell, M.D., Memphis, Tenn. Publishers, C. V. Mosby Company, 3525 Pine Bvld., St. Louis, Missouri. Price $12.50.

One has to but look at the name of the author to be sure of the worth of this publication. The reviewer has spent many hours with Dr. Campbell in his Clinic and watched the methods of examination, preparation, operation and after care and it is fortunate that he has been able to explain these methods in this exhaustive and detailed manner.

This work of over 1,100 pages is systematically divided into 23 chapters with the material in each chapter sub-divided in such a manner as to make handy reference.

The completeness with which each subject is covered is one outstanding feature, not only is the text complete but the illustrations demonstrate in detail the subject matter and leave nothing to the imagination. There are 845 of these illustrations, nearly all original drawings and X-rays. The drawings illustrate the various steps in operative procedures and are not only artistic but show distinctly every detail.

Anatomy, physiology, pathology, mechanics, operative procedure, pre and post operative care all receive due attention by the author.

Many of the surgical procedures are original and each operation advocated is backed by the long experience of Dr. Campbell and his corps of able associates and the ultimate result is based on the observation of the patient at the conclusion of treatment in all cases where possible.

This book is indispensable to the orthopedic surgeon and as many of the procedures are applicable to the practice of general surgery it will find an important place in every surgical library.

MEDICAL STATE BOARD EXAMINATIONS: by Harold Rypins, A.B., M.D., F.A.C.P. Published by J. B. Lippincott Company, Philadelphia. Price $4.50.

This is the fourth edition of a book that has given fine service to the candidate for examination before the State or National Boards as he is given a classification of questions and answers that relieve him of much reading and directs his thoughts along the lines of the usual questions asked.

The material is treated concisely and collateral material is omitted. In this manner the applicant finds the essential facts covered in 448 pages.

Only by studying this book can one be convinced of its value and the amount of time and energy conserved.

THE OKLAHOMA PRENATAL EXAMINATION LAW

G. F. Mathews, M.D., Commissioner
Oklahoma State Health Department

The Prenatal Examination Law prepared by the American Social Hygiene Association under the direction of Bascom Johnson was introduced in the last session of the legislature by Senator Ritzhaupt and co-authors, amended and passed. The state-wide interest and support of the medical societies did much to assure the passage of this bill and is greatly appreciated.

The attention of physicians engaged in obstetrics is called to the provisions under section 2 requiring a statement on the birth certificate showing whether a blood test for syphilis was made and the date of the test and if not made the reason why the test was not made. In no case shall the result (positive, negative, etc.) of the test be stated on the birth certificate.

On the new 1939 birth certificates space has been provided for the above data on line 23 (b). If the old form is used the data may be written on the margin.

Examples: 23 (b) Blood test taken 1-15-39
or
23 (b) Blood test not taken, patient refused, etc.

The text of the law is as follows:

Senate Bill No. 92

AN ACT RELATING TO SEROLOGICAL BLOOD TESTS FOR SYPHILIS DURING PREGNANCY AND REPORTS THEREOF.

BE IT ENACTED BY THE PEOPLE OF THE STATE OF OKLAHOMA:

SECTION 1. Every physician attending a pregnant woman in the State during gestation shall, in the case of each woman so attended, at her request or with her consent, take or cause to be taken a sample of blood of such woman at the time of first examination, and submit such sample to an approved laboratory for a standard serological test for syphilis. Every other person permitted by law to attend upon pregnant women in the State, but not permitted by law to take blood tests, shall cause the blood of such pregnant woman to be taken by a duly licensed physician and submitted to an approved laboratory for a standard serological test for syphilis. The term "approved laboratory" means a laboratory approved for this purpose by the State Commissioner of Health. A standard serological test for syphilis is one recognized as such by the State Commissioner of Health. Such laboratory tests as are required by this Act shall be made on request without charge by the State Department of Public Health.

SECTION 2. In reporting every birth and stillbirth, physicians and others permitted to attend pregnancy cases and required to report births and stillbirths shall state on the certificate of birth whether a blood test for syphilis has been made during such pregnancy upon a specimen of blood taken from the woman who bore the child for which a birth or stillbirth certificate is filed and, if made, the date when such test was made, and, if not made, the reason why such test was not made. Such information shall be in addition to that required to be included in certificates of birth by Section 4509, Oklahoma Statutes 1931. In no event, however, shall the certificate of birth state the result of the test herein required.

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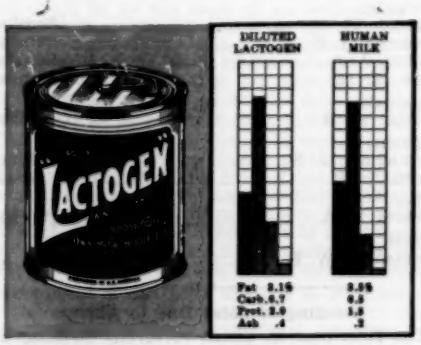

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Swelling of Joint Due to Allergy

The first case in which recurrent swelling of a joint was definitely traced to allergic factors is cited by Herbert Berger, M.D., Tottenville, Staten Island, N. Y., in The Journal of the American Medical Association for June 10.

Elimination of the foods causing the allergy, he states, not only relieved the other allergic manifestations—gastrointestinal disturbances and hay fever—but also stopped the recurring collection of joint fluid responsible for the swelling and caused a general puffiness of the skin entirely to disappear.

He concludes from a review of the incidence and cause of the condition that all these symptoms do not constitute a disease but are due to a variety of general and local factors.

USUAL DREAD OF PROSTATECTOMY IS UNFOUNDED, PHYSICIAN SAYS

Reduction of Operating Hazards Lowered Mortality Rate to Only 2.4 Per Cent Among Omaha Doctor's Patients

There is little reason for the dread by the average person of prostatectomy (surgical removal of the prostate or of a part of it), Edwin Davis, M.D., Omaha, Neb., declares in The Journal of the American Medical Association for June 17 in an article which discusses the factors tending to minimize the hazards from this operation.

Pointing out that in a series of his cases totaling 741 the mortality rate was only 2.7 per cent, Dr. Davis enumerates and discusses briefly "the various factors which are responsible for this conspicuously low mortality rate and which have placed this operation in the category of so-called finished operations. This term seems permissible because the mortality rate so closely approximates the 'normal' death rate for the age of 70 and because questionnaire records show that, of aged persons, many of whom have unrelated ailments and symptoms which might readily be confused, 82.3 per cent voluntarily classified themselves as 'well' and 98.8 per cent as 'well or improved.' The lowering of the mortality rate has been essentially a process of elimination of the various hazards one by one."

Elaborating on the mortality rate, the author says that "according to the American experience tables of mortality, of 100 persons alive at the age of 70, six may be expected to die before reaching 71. Carrying this comparison to its extreme in absurdity, if the period of hospitalization for prostatectomy was one year, the 'normal' death rate might be said to be more than twice the postprostatectomy death rate."

The various hazards of prostatectomy listed by Dr. Davis include retention or insufficient secretion of urine, infection, hemorrhage (immediate and delayed), complications due to the anesthesia, inflammation of the epididymis and vascular "accidents," that is blood clots in the heart, lung or brain arteries. He asserts that "all but the last named are controllable and have been reduced to a negligible minimum.

"There is no reason why the mortality rate of prostatectomy in the aged and debilitated should not be made to compare favorably with that of operations for hernia in the young and robust."

X-Ray Pictures Aid Obstetricians

X-ray pictures of the pelvis in pregnancy are a valuable auxiliary to clinical studies in indicating the probable course of labor and in determining the best method of delivery, Emanuel M. Rappaport, M.D., Jamaica, N. Y., and Samuel J. Scadron, M.D., New York, declare in The Journal of the American Medical Association for June 17.

Greatest accuracy is attained, they point out, when both the clinical and X-ray methods are combined, that is when obstetricians familiar with pelvic X-rays examine the films as well as the patient. "We do not believe," they state, "that the roentgenologist (X-ray specialist) alone can render a more accurate opinion (except academically) than the experienced obstetrician. For the inexperienced clinician, however, the X-ray record should be a valuable guide. Moreover, both the obstetrician and the roentgenologist must know their limitations."

The use of X-rays is especially important in those cases in which cesarean operation or instrumental aid will be necessary because of a contracted pelvis or some other pelvic abnormality.

Normal delivery may be expected in the great majority of instances when clinical and X-ray studies agree that the pelvis is large enough for the fetus.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Recurrent Perforations of Gastro-Duodenal Ulcers (Les Perforations Iterapives des Ulceres Gastro-Duodenaux). By Henri Grizaud, Chirugien des Hopitaux Coloniaux, Medecin-Chef de l'Hopidal d'Abijou. ("Cote d'Inoire.") La Presse Medicale, January 11, 1939.

There is a reference by the author to a recent article by J. Gosset, Jouneau and Allamand, published in La Presse Medicale, October 22, 1938, upon the subject of "Recurrent Perforations of Gastro-Duodenal Ulcers." It was the general conclusion of the authors quoted that such ulcers have a distinct tendency to recur. The author reports the case of a medical officer in the Colonial Service who had had a perforation of a gastric ulcer in 1935, at which time there was an emergency operation, the ulcer being closed by sutures placed in such a way that there was inversion of the margins. No other operation was attempted at that time.

After the operation the patient did well for several years, having returned to active service in the Colonial army following a rather long period of rest and appropriate management.

In August (presumably August, 1938) there was an attack of dysentery at which time the ulcer symptoms reappeared. About the time that the dysentery was controlled there was sudden, agonizing abdominal pain, short and rapid breathing, much sweating, but no distinct board-like abdomen (mais pas de ventre de bois). There were all the classical evidences of perforation, with the exception of a board-like abdomen. However, there was some rigidity, and notwithstanding the absence of this classical sign it was believed that there had been a perforation.

The patient was seen two hours after the symptoms appeared. He was 36 kilometers from a well equipped military hospital. The confrere who was in attendance, and who is the author of the article under consideration, gravely and logically discusses the question as to whether the patient should be subjected to an operation in the field, where there was only meagre equipment and facilities, or be transported the 36 kilometers to the well equipped military hospital. Taking into consideration the early diagnosis, in connection with inadequate facilities for a major operation in the field, the patient was transmitted to the hospital where he arrived in a condition apparently as good as before the journey was undertaken.

After arriving at the hospital where there were X-ray facilities, a radiogram of the upper abdomen, showing a line of what appeared to be air or gas between the liver and the diaphragm, confirmed the diagnosis.

Operation was done at once under ether anesthesia. There were adhesions of the omentum to the surrounding structures, and after they were separated much dirty fluid was found in the right upper abdomen. With some difficulty, a perforation the size of a lentil, circular in shape, clean cut borders, and surrounded by scar tissue, was disclosed in the distal portion of the stomach. It was sutured, and the suture line was reinforced by suturing over it surrounding available tissue, it being possible to draw the same omentum over it. A drain was placed in the subhepatic area, and it remained in place for three days. There was satisfactory recovery, and, with proper management, the patient did well after the operation. It is quite apparent that the author who was treating the patient had two distinct convictions: The first was not to undertake a major operation with inadequate facilities in the field in the early hours after a perforation; the second was that he did not believe it wise to do more than to close the perforation and provide for drainage.

In the same number of La Presse Medicale there is another interesting and instructive article on practically the same subject, the title of the article being:

Recurring Perforations of the Duodenum (Les Perforations Iterapives des Ulceres Duodenaux), by J. Bottin, of Liege, Belgium.

In this article by Bottin there is a general discussion of the proper procedure in the presence of symptoms and signs of perforation, the author mentioning, incidentally, the proper procedure in connection, not only with recurrent perforations, but in connection, also, with primary perforations of the stomach and duodenum. It appears that it is the custom in the clinic that he represents to be very conservative, particularly in the presence of symptoms and signs of perforation that is primary—that is, in the case of an individual who had not had an operation before. In such a case the advice is to simply close the perforation, without any attempt to do a gastro-enterostomy or a resection. It appears that he believes that that simple procedure, with necessary drainage, is all that should be done in the case of such a patient.

The author reports the cases of several patients in which there were recurrent perforations, and, notwithstanding that the title of his communication is "Recurring Perforations of the Duodenum," in the cases that he reports there was, without exception, a recurrent perforation of the stomach. It is assumed that there is a typographical error in connection with the title of the communication.

The author is distinctly inclined to be conservative in connection with perforations of any character, whether they are primary or recurrent.

In one of the patients reported by Bottin there were both gross and histological evidences of carcinoma of the stomach, but the statement is made that it was impossible to determine whether the carcinoma of the stomach had arisen from a previous ulcer. Such pathology requires more radical surgery.

There is a significant statement that when there is simple closure, with drainage, if necessary, after a primary perforation, it has been shown that about 40 per cent of the patients were apparently cured—that is, they did not have any subsequent symptoms and signs indicative of ulcer of the stomach or duodenum.

Comments: 1. It appears from both of the above articles that the authors are of the distinct opinion that after a primary perforation of stomach or duodenum the operation should be conservative—that is, proper closure of the perforation, with drainage, if necessary. 2. In the case of recurrent perforations of stomach or duodenum the surgeon ought to be inclined to conservatism, radical operations, like resection, being reserved for certain patients in which there is definite evidence of malignancy. 3. It should be noted that in the first article drainage was employed for only three days. Knowing something about the technic of the average French surgeon, this is a surprising statement. It has been our experience that if a drain is employed it should be left in place for a much longer time—even 10 days in the case of some patients. We believe that removal of drainage after only three days might be disastrous. 4. The discussion by the military surgeon about the advisability of transporting the patient to hospital rather than undertake an abdominal operation in the field, or in any place where there are not good facilities, is valuable, and we endorse it fully. We believe that the transportation of a patient is much less hazardous than to undertake an intra-abdominal operation without reasonably adequate facilities.

LeRoy Long.

Recent Advances in the More Common Problems of Minor Anorectal Surgery: Robert A. Scarborough, M.D., San Francisco, California; Surgery, June, 1939, Vol. 5, No. 6, page 952.

The treatment of anorectal disease too long remained in the hands of the charlatan, who glibly promised cures without surgery and dispensed "painless pile dissolvents."

It is important to realize that the vast majority of pathologic conditions occurring in this region must be approached and treated by the special application of general surgical principles.

Hemorrhoids: It is, unfortunately, still true that from 26 to 50 per cent of patients with carcinoma of the rectum, within easy reach of the examining finger, still receive treatment for some other supposed rectal condition (usually hemorrhoids) for weeks and months before the correct diagnosis is made.

There has been increasing recognition of the fact that true appreciation of the presence and size of hemorrhoids cannot be gained by mere external inspection, nor is digital examination of particular value because of the softness and easy compressibility of internal hemorrhoids. Internal inspection is of prime importance, preferably with an anoscope which has an oblique internal orifice. In the determination of treatment it is important to recognize internal and external hemorrhoids as such. Most surgeons now realize that patients do not actually suffer from hemorrhoids but from the complications of hemorrhoids, and proper treatment must depend upon what those complications are. Those situated above the mucocutaneous or pectinate line and covered with mucous membrane are always internal hemorrhoids and those situated below this line and covered by skin are always external hemorrhoids regardless of their relative position inside or outside of the anal canal at the time of examination. Too often a doctor as well as a patient attempts by main force to "reduce" an acutely thrombosed external hemorrhoid, inflicting more harm than good upon the unhappy patient. It is to be remembered that the mucocutaneous line is also the landmark for the upward extent of sensory innervation. When the patient's chief complaint is pain, the cause of this pain must be at or distal to this line and regardless of how big or how vascular or how eroded are his internal hemorrhoids it must be realized that this pain is not going to be relieved by treatment directed solely to the internal hemorrhoids. Regardless of size, the patient's symptoms may not be from the hemorrhoids at all but may be due to a great variety of other causes, including cancer. In evaluating the recommended methods of treatment for hemorrhoids, it must be realized that the only satisfactory application of any of these methods will depend upon the surgeon's complete understanding of the true pathologic condition present and the correct application of the proper method of treatment to the particular condition existing.

Thrombosis of external hemorrhoids is usually due to multisacculated intraluminar thromboses rather than from the result of a mechanical rupture of an anal varicosity with formation of an extraluminar hematoma. Conservative treatment of the small thrombosed external hemorrhoid by rest, hot Sitz baths, and stool lubrication will be followed by gradual resolution and fibrosis in the course of from a few days to a week or more. Incision and expression of the clot are to be discouraged as this rarely shortens the natural course of the disease. Block excision of the multisacculated clots should be done through an elliptical incision in the overlying skin so devised that the edges of the incision will fall accurately together at the end of the operation. If properly accomplished, with no sutures or ties employed, relief is complete in a short time. There is some debate as to the advisability of immediate operation in cases of diffuse thrombosis of external and internal hemorrhoids, but the majority of surgeons prefer immediate operation, discounting the danger of embolism, liver abscess, or stenosis (resulting from inability to judge the amount of tissue necessary to remove).

Careful perusal of the literature of the last few years does not lead to the impression that the operation of hemorrhoidectomy has yet escaped from its unenviable reputation for postoperative pain. The various types of operation in vogue a hundred years ago still have their proponents. This situation encourages the charlatan who glibly promises cures without surgery. It also has led to the popularity of so-called "ambulant methods." And yet, in actual fact perhaps the greatest advance in minor anorectal surgery has been in the operative treatment of hemorrhoids. This has not occurred as a result of a new type of operation, but by awakening recognition of the fact that hemorrhoidectomy is fundamentally a plastic operation performed upon tissues of peculiar anatomic characteristics in a region incapable of complete physiologic rest and inevitably subject to infection. Merar, in 1939, laid down certain rules for hemorrhoidectomy: (1) Avoidance of every form of injury, mechanical, thermal, chemical; (2) application of that expert and particular care to which this area, as one of the most sensitive regions in the body, is entitled; (3) utilization of a tried and tested routine preoperative and postoperative regime; (4) selection of an open, nonburning, nontraumatizing method of operation.

In plastic surgery great emphasis is placed on preoperative preparation and particularly on postoperative care of wounds. This is of vital importance in hemorrhoidectomy and upon this depends in considerable part the postoperative comfort of the patient. There are two noteworthy omissions in present-day postoperative routine; the large retention rectal tube routinely employed a few years ago, and the practice of "tying up the bowels" for a week or more after operation. The retention rectal tube was a constant source of irritation to the wound and elicited a reflex spasmodic contraction of the sphincters which was harmful to healing and most uncomfortable to the patient. The early passage of a soft but formed stool will accomplish the desired effect in

so far as postoperative dilatation is concerned with the minimum of discomfort to the patient. This is accomplished by giving food immediately after operation together with some agar, mineral oil or tragacanth preparation to assure a formed but soft stool. Spontaneous defecation usually occurs on the third or possibly fourth postoperative day and is far more desirable than the use of enemas or more drastic catharsis.

The importance of complete muscular relaxation for correct plastic surgery on the rectum cannot be overstressed. The position on the table is important. (The author prefers the prone ventral position). The object of the operation is to make a thorough removal of the groups of varicose veins underlying the mucous membrane of the distal portion of the rectum and the skin of the anal canal with satisfactory functional result and a minimal deformity. It is important to recognize the fact that sterilization of the operative field is impossible. Sutures placed distal to the mucocutaneous line will increase postoperative discomfort. Divulsion of the sphincters is generally disapproved. The idea of causing temporary paralysis by stretching of the sphincters is based on a false premise.

Injection Treatment of Hemorrhoids: This method of treatment was originated in 1866 by Blackwood and exploited by charlatans and ignorant practitioners for many years causing it to fall in disrepute because of the many unfortunate complications incurred. Today, it is realized to be of some value, but it is universally conceded and emphasized that injection therapy is restricted to the treatment of internal hemorrhoids and should never be used for external hemorrhoids. Injection of sclerosing solution below the mucocutaneous line produces severe pain and is usually followed by extensive painful necrosis and sloughing of tissue. Perhaps sufficient stress has not been laid upon its contraindications in the treatment of internal hemorrhoids which are complicated by inflammation, thrombosis, marked ulceration, or strangulation, or in the presence of associated conditions, such as cryptitis, fissure, or fistula.

For practical purposes one may say that the injection method is suited and should be confined to the treatment of uncomplicated, superficially eroded, internal hemorrhoids in the patient whose only symptom is bleeding. Any patient who has pain as a primary complaint necessarily has some pathologic condition at or below the level of the mucocutaneous line and will not be relieved of his pain by injection treatment. One sees many claims of permanent cure with injection treatment, but the majority of surgeons believe that this form of treatment exceptionally produces permanent cure. If one is to employ injection treatment, patient should be told that the effect may not be expected to be permanent, but may give satisfactory temporary relief from bleeding and that further treatment may eventually be required.

Of the sclerosing solutions the two most popular at the present time are: (1) quinine and urea hydrochloride (5 per cent) and (2) phenol, 5 per cent in vegetable oil.

Prolapse: It is probable that injection treatment has a place in the treatment of prolapse, incomplete or partial. A number of surgeons now believe that all degrees of prolapse should be treated by injection, and only if failure results should operation be considered.

LeRoy D. Long.

Experience with Surgical and Radiation Therapy in Carcinoma of the Corpus Uteri. William P. Healy, M.D., and Robert L. Brown, M.D., New York, N. Y. American Journal of Obstetrics and Gynecology, July, 1939, Vol. 38, Page 1.

This is an extremely valuable report giving the latest statistical information upon the treatment of carcinoma of the body of the uterus at Memorial Hospital in the 15-year period 1918 to 1932. The subject material is a group of 197 patients who received primary treatment during that interval. Of this 197, 93 were treated by a combination of surgery and radiation, 96 by radiation therapy alone and eight by surgery alone.

The symptoms of carcinoma of the uterine body begin usually after the menopause and in this series 78 per cent of the patients stated that the onset of symptoms occurred after menstruation had ceased. The most important and frequent symptom of carcinoma of the uterine body is uterine bleeding and it was found in 98 per cent of this group of 197 patients. In 97 per cent the bleeding was postmenopausal or intermenstrual while in one per cent menorrhagia only was noticed.

Pain was present in 27 per cent of the cases and these authors feel it is a symptom of some prognostic significance. Of the 53 patients complaining of pain 66 per cent later died of carcinoma, whereas of the 144 patients without pain only 37 per cent died of carcinoma. They also point out that in 43 per cent of the patients complaining of pain when their history was taken, and who later died of carcinoma, there was no palpable evidence of extension beyond the uterus at initial examination. They feel, therefore, that pain in some cases at least indicates the extension beyond the uterus before such extension can be verified by examination.

Vaginal discharge was noted in their histories in only 35 per cent of the patients and in the patient's minds was not as important as the presence of blood.

In 101 patients who were subjected to abdominal operation 38 per cent were found to have both fibromyoma and carcinoma of the uterus. The authors emphasize the fact that the source of bleeding cannot be considered as non-malignant just because of palpable fibroids and that examination of endometrial tissue is a prerequisite to an accurate diagnosis.

The entire series of 197 patients was divided into clinical groups according to the extent of the carcinoma as evidenced by observation and palpation. It appeared worthwhile from both a prognostic and therapeutic standpoint to so sub-divide the patients into clinical groups according to the size of the uterus and palpable extent of disease. "If the uterus is not larger than the size of a 2½ months gestation, and if there is no evidence of extension of carcinoma beyond the uterus (Group II), the five-year survival rate is 60 per cent if based upon the entire series of 197 cases without regard to treatment, and 88 per cent if based upon results in a smaller series of cases treated according to what is considered by us as the preferred method of treatment. If the uterus is larger than a 2½ months gestation (Group 11-A) our findings indicate that the chance for cure from radiation alone is extremely low. If there is palpable extension of carcinoma beyond the uterus (Group III) the chance for five-year survival is approximately 10 per cent." In group I they have placed all patients in whom there is no palpable enlargement of the uterus. It is also interesting that when the uterus was larger than a 2½ months gestation, the five-year survivals were only 35 per cent regardless of method of treatment.

All patients were likewise grouped upon a histological basis. Approximately half of all cases were adenoma malignum, one-fourth were adenocarcinoma grade II and approximately one-fourth adenoma grade III or IV. They believe that the histological type has a direct relation to chance for cure and is of a definite prognostic importance. The five-year survival rate for adenoma malignum grades I and II was 60 per cent, for adenocarci-

noma grade II it was 42 per cent, for adenocarcinoma grade III and IV it was 20 per cent and for adenoacanthoma 60 per cent. By histological grouping they also demonstrated a definite difference in methods of treatment particularly in the adenoma malignum group where radiation alone yielded 39 per cent five-year survival, whereas 78 per cent of the patients with the same lesion treated by radiation followed by hysterectomy were well five years later. The difference was far less in adenocarcinoma grade II with percentages 41 and 44 per cent respectively. The results in their 10 cases of adenoacanthoma were 60 per cent with no significant difference between the two methods of treatment.

"Radiation alone has definite curative value in cases which for one reason or another cannot be subjected to subsequent panhysterectomy, the five-year survival rate for the group of 96 patients treated by radiation alone being 39 per cent. When only clinical Groups I and II are considered the five-year survival is 56 per cent and the five-year cure (free from all evidence of carcinoma five years or more) is 47 per cent."

These authors believe that the ideal treatment based upon their present experience is intrauterine radon, usually not less than 3,600 millicurie hours, supplemented by roentgen ray and followed by hysterectomy. In their group of 28 cases so treated there were 79 per cent five-year survivals. They have found the risk of any major complication under this plean of treatment very slight. In considering the five-year survival rate for all patients treated by any combination of radiation and therapy in this series of 179 regardless of the particular technic employed 55 per cent were found to have survived five years or more.

The authors feel that their greater survival rate with their present method of treatment is due to the fact that a slightly larger dosage of radium emanation is being employed followed by hysterectomy.

It is entirely noteworthy that in 25 cases where a dosage of 3,000 to 3,300 millicurie hours was employed there was complete disappearance of carcinoma in 52 per cent and in 20 patients receiving 3,400 to 4,000 millicurie hours 60 per cent showed residual carcinoma. However, the remainder or 40 per cent of those receiving 3,400 to 4,000 milligram hours did have residual carcinoma and therein lies the principal reason for including hysterectomy as a part of the treatment of carcinoma of the body of the uterus. The advantages given for the combination of preoperative radiation and subsequent hysterectomy as seen by these authors are: 1. "It is conceivable that radiated carcinoma even if not completely destroyed is somewhat less likely to enter blood or lymph channels or to remain as viable implants in the pelvis at the time of hysterectomy than is carcinoma which has not been subjected to radiation." 2. "Second and far more significant is the fact that the results of the combined method of treatment as now employed is definitely better than those obtained by surgery alone." This is especially true considering the group of 28 patients receiving 3,000 to 4,000 millicurie hours of intrauterine radiation followed by hysterectomy where the survival rate at the end of five years was 79 per cent.

These authors quote Arneson who recently reviewed the literature on the surgical treatment of corpus cancer and found that of 927 reported cases 57 per cent of the patients were living five years or more afterwards.

Comment: This article has been reviewed more completely than is my usual practice because it contains certain information that should be in the hands of every doctor and other material which should be added to the fund of knowledge of one who is attempting to treat this disease.

In the first place, any post-menopausal bleeding must be considered a symptom of malignancy until the diagnosis is disproved. It is likewise true that intermenstrual bleeding must be looked upon with almost equal suspicion and that with intermenstrual bleeding or post-menopausal bleeding, whether or not fibroid tumors are present, the only accurate means of diagnosis is diagnostic curettage and microscopic examination.

This article has also emphasized the prognostic value of clinical grouping and the immediate lesson to be derived from this information is the all important advantage of early diagnosis and treatment before the disease has advanced to the later clinical groups.

In the rather small group of 28 cases in which 3,000 to 4,000 millicurie hours of radon were employed in the uterus followed by hysterectomy with 79 per cent survival rate there is good statistical evidence for the employment of preoperative irradiation.

This combined with the report of Arneson is convincing argument in favor of preoperative irradiation in sufficient dosages from 3,000 to 4,000 milligram hours of radium, with hysterectomy following in about eight weeks.

There is sound reason in this article both from the pathological findings and the ultimate survival rates for including hysterectomy in the treatment of carcinoma of the body of the uterus whether or not radiation has been employed.

Wendell Long.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Significance of Venous Pulsation of the Eye Ground. Paul Weinstein, M.D., Report of the Eye Department of the Albert Apponyi Polyclinic at Budapest. British Journal of Ophthalmology, June, 1938.

The fact that there is a pulsation of the eyeground has been an established fact since 1853. Arterial pulsation is pathological. In contradistinction venous pulsation is physiological.

The origin of arterial pulsation is still an unknown phenomenon. There are two theories in regard to venous pulsation. One is that spontaneous venous pulsation is caused by the wave of arterial pulsation transpiring through the capillaries, into the vein and thus inducing it to pulsate. The theory generally accepted is that the pressure of the central retina vein is higher than the tension of the eye; if the difference between ocular tension and venous pressure is absent, an increased amount of blood enters the eye at every systole, ocular tension is increased, becomes greater than the venous pressure, and the circulation being obstructed, causes the vein to pulsate. Therefore the logical conclusion is that the venous pulsation of the eyeground is chiefly dependent on ocular tension. This is also shown by the fact that under mydriatics, the spontaneous venous pulsation increases.

Baurmann says the pressure of the central retinal vein is also dependent on intracranial pressure (i.c.p). The author has observed previously that the blood-pressure of the eyeground is generally diminished in pregnant women as is also the ocular tension. He found that in 38 per cent of the pregnant women examined in the clinic, spontaneous venous pulsation was apparent. The average systolic blood pressure of this group was 123 mm. systolic. Where the venous pulsation was not present the blood pressure was lower. From exam-

inations in this clinic it was determined that venous pulsation is more commonly present in individuals, who have a disposition to hypotonia, complaining about headache and giddiness. There is a discussion of the relationship of i.c.p. and cysternal puncture, pressure of the retinal vein and spontaneous pulsation.

The author closes with the following paragraph: "According to my researches spontaneous venous pulsation of the eyeground therefore originates by two mechanisms. One of them consists of a transpiring of the arterial capillary pulsewave at high blood-pressure, towards the vein. The other works by the i.c.p. being eventually diminished, the pressure within the central retinal vein being reduced to the level of ocular tension, and thus inducing pulsation. There can be of course no discussion about the validity of Pines' opinion published in the August number of the Brit. Jl. Ophthal., 1938, according to which local anatomical conditions, namely, an angular bend of the central retinal vein within the physiological excavation of the papilla influences pulsation, the less so, as in a given case the one, or other, or both eyes display venous pulsation.

The Treatment of Hysphonia and Allied Condition. Cortlandt Macmahon, London. The Journal of Laryngology and Otology, June, 1939.

Some of the causes of dysphonia mentioned are: after operation on throat and larynx; infection of the vocal cords from antra, teeth, tonsils and nasopharynx; certain affections of the heart; a general asthenia from any severe illness may affect the internal tensors and adductors of the larynx; it may accompany neurasthenia; gross misuse of the voice; it may be a sequela of functional aphonia.

Instruction on production of voice is an important factor in the writer's treatment of this condition. He says: "For acquiring a good voice a healthy condition of the nose is essential." Correct breathing, especially nasal breathing exercises, are helpful.

Difficulty in speaking following the removal of the thyroid gland is one of the most severe conditions that one has to deal with. The first thing is to get the patient to acquire gentle lower costal breathing and get rid of the upper costal breathing. This produces a deeper pitch of voice and this is helped by pressing the tongue down 100 times night and morning on the sound of "ah." This encourages the adductor muscles to relax and the abduction muscles to function better. In case of impairment of voice following an operation for intrinsic carcinoma of the larynx, the treatment is exactly the same. Voice training may cause nodes on the cords to disappear entirely; if nodes are present the voice is seriously impaired. Lupus of the larynx has been observed only once in the experience of the writer. This was in a young girl who was given two years complete vocal rest and voice training.

Misuse of the voice causes the most common types of dysphonia. Medical examination is necessary before voice training is started. Some of these patients are cured by altering the pitch of the voice, stretching the throat muscles by means of the tongue depressor, and getting correct breathing. Overbreathing and tensing of the throat muscles may produce a dysphonia by putting a strain on the cords. Functional aphonia in connection with dysphonia is discussed—the technique being given to bring back the voice.

The most difficult to treat of all affections of the voice is spastic dysphonia. Sir St. Clair Thomson and Mr. Negus compare this affliction to that of writer's cramp. It usually occurs from overwork, consequent exhaustion and talking along in normal voice for several sentences when suddenly a voice is produced with a very high pitch. The voice comes and goes in this strange manner. Exercises for voice training are given, these help in getting emotional control. The Eunuchoid voice is calamity to its possessor. The cause of this according to the author: "At puberty when the larynx grows in size and the cords increase in length, the ary-vocales muscles have not as is usual at this stage of life ceased to exercise their function of shortening the vibrating surfaces of the cords like the fingers on a violin string." The treatment is highly successful.

In laryngectomy cases the new voice should be tried as soon as the leakage from the pharynx has ceased. The patient should not attempt to acquire the pharyngeal voice and at the same time use an artificial larynx. There is not any bibliography.

X-Ray Treatment of Infections: A Review of the Literature and Report of Cases of Mastoiditis and Sinusitis. B. R. Dysart, M.D., Pasadena. The Annals of Otology, Rhinology, and Laryngology, June, 1939.

The author's attention was first called to improvement following X-rays of what is considered probably operative mastoiditis. Following the taking of the picture, there was decided improvement in about 24 hours. A review of the literature shows over 200 published articles with many favorable comments and little or none unfavorable on X-ray treatment of inflammatory conditions. Too large doses may aggravate the condition—small doses do not do any harm.

Arthur U. Desjardins of the Mayo Clinic says: "It seems likely that the infecting organism also plays a part in the effect of irradiation. The fact that streptococcus infection often causes little or no leucocytic infiltration may explain why, except in erysipelas, inflammatory lesions of this character do not respond so well, on the whole, as lesions caused by the staphylococcus."

His opinion is that the X-ray causes a disintegration of lymphocytes and causes the protective substances (antibodies, etc.) of these to be freed and made more readily available for the defense of the invading organism than when they were in the lymphocytes. Among lesions benefited by this form of treatment he mentions furuncle, carbuncle, acute simple adenitis, acute parotitis, complicating operations on the colon and other abdominal structures, abscesses and cellulitis of soft tissues, onychia and paronychia, mastitis, sinusitis and mastoiditis in selected cases.

Experimental reports show no effect of X-ray on organisms in culture media. To get the best results treatment should be instituted early, before suppuration. Charles Goosmann uses this treatment in postoperative mastoiditis with continued suppuration with good results. Wagner reported three cases with fatal results following large doses of X-ray in purulent pelvic infections. Diphtheria carriers are said to respond well to X-ray. Twelve cases were treated with X-ray, with a picture that showed an acute mastoiditis with enough haziness to consider operation. One to four doses were given at intervals of five days. These cases are reported in detail. According to the author treatment of sinusitis has not been as satisfactory as otitis media and mastoiditis.

A bibliography is appended to this article.

Perforated Peptic Ulcer from an Abscess of the Brain of Otitic Origin. Shirley Harold Baron, M.D., New London, Conn. Archives of Otolaryngology, June, 1939.

This is a case report of unusual interest. There is a two-page discussion of the clinical reports of

similar cases. The author believes this ulcer to be of neurogenic origin. As early as 1845 there are recorded experiments on the neurogenic origin of peptic lesions. His discussion of the experimental reports brings this data up to date (Metler and co-workers, 1936).

I will give as brief a summary of the case as possible to retain the important points. A woman, age 26, was admitted to the hospital; chief complaint was pain in and around the left ear accompanied by a foul-smelling discharge; the ear had been discharging for the past 12 years following influenza; three and a half years before admittance to the hospital she had been advised that she should have an operation on her left mastoid; she refused operation then because of cessation of pain; the discharge was the only untoward sign until two weeks before coming into the hospital she complained of a dizziness and an unsteady gait; four days before coming into the hospital she had pain in the left mastoid region, temporal and occiptal headache, nausea and vomiting; in the hospital examination showed much foul-smelling pus, perforated drum, swelling of the posterior superior wall, slight tenderness in the left mastoid region, absence of air conduction, inactive left labyrinth, ocular movements normal, pupils normal in appearance and reaction, fundi negative, neck flaccid, knee jerks and abdominal reflexes active, ankle jerks not elicited, Kernig's and Babinski's absent; abdomen negative; temperature on admission 98° F., pulse 70 and respiration 20; W.B.C. 10,140, 84 polys, 15 small lumphs, 1 monocyte, 85 per cent hemoglobin; X-ray showed a sclerotic left mastoid; a radical left mastoid was done; cholesteatoma were found in the antrum; the dural and sinal plates were removed—no perisinal or epidrual abscesses present; middle ear culture showed Bacillus mucous capsulatus; for five days the postoperative course was uneventful and then began a fluctuation of temperature that became greater daily (97.4° to 105.4°); blood cultures were negative; there was no rigidity or very little; ophthalmoscopic examination showed superior and nasal borders of the nerve head indistinct—no definite swelling; the temperature being characteristic of a lateral sinus thrombophlebitis (eleventh day postoperative) it was decided to explore further on the following day; at this time the general condition of the patient seemed good—pulse 80-130—no nausea or vomiting—no particular complaints except a feeling of mild discomfort in the left side of the head; the night before the second operation was to be done the next morning the patient died suddenly. The autopsy showed: abscess of the brain, thrombosed lateral sinus, mastoiditis, perforated gastric ulcer, septic spleen and acute glomerular nephritis.

The author feels that the perforated gastric ulcer was caused by the abscess of the brain. Abscess of the brain was considered from the first but exploration was not done because of lack of physical findings.

PLASTIC SURGERY

Edited by

GEO. H. KIMBALL, M.D., F.A.C.S.

404 Medical Arts Building, Oklahoma City

Gastrointestinal Ulcerations Following Burns: by John L. Kelley, M.D., Boston, Massachusetts. From the American Journal of Surgery, July, 1939.

The author calls attention to the fact that ulcerations of the gastrointestinal tract which occur as complications of cutaneous burns are commonly called Curling's ulcerations, but two articles appeared in literature 10 years prior to Curling's series describing similar lesions. The fact that Curling's paper described a lesion specifically of the duodenum, and his series is the largest series yet published attaches his name to this condition.

Perry and Shaw report five cases in 149 fatal burns in a period of 50 years, 1843-1892. Other series show much lower incidence. No incidence of gastrointestinal ulceration was reported in the Peter Brigham Hospital, 1913-1937, with 17 fatal burns.

The etiology is given consideration with no definite conclusions reached. The most probable cause would seem to be concentration of the blood stream with its attenuate slowing of circulation and thrombosis in the mucosal vessels. Other factors considered are adrenal damage, neurogenic etiological factors, and toxic absorption. The pathology of these lesions is similar to other acute ulcerations. These lesions may be single or multiple, the former usually occurring in the duodenum between the pylorus and ampulla of Vater, the latter usually along the lesser curvature of the stomach. These ulcers are usually acute and terminate in either perforation or healing, although at least one case has been demonstrable in X-ray 13 years after original burn.

Symptoms are usually pain of an ulcer type, hematemesis and usually occur between 18 hours and 100 days. This complication of burns is more frequent in children than in adults, although lately more cases have been reported in adults. "To conclude that hematemesis or melena in burned patients is due to ulceration is justified in a large majority of instances."

Prophylactic treatment for gastrointestinal ulceration following burns would appear to be the modern treatment of burns. This is generally supportive, and dilution of the blood stream with normal saline and glucose. Also the control of pain with opiates is an important factor. Local treatment with eschar producing agents such as tannic acid and gentian violet is conducive to the conservation of blood serum and proteins. The active treatment of the ulcer is the same as medical treatment of ordinary peptic ulcer. The indication of surgical intervention is the same as peptic ulcer, that is, perforation and hemorrhage.

Conclusion: The author has reviewed the literature carefully. It is to be noted that gastrointestinal ulcerations, as a sequelae of burns, is rather uncommon.

The author outlines the treatment for such cases. The modern treatment of extensive burns has apparently lessened the incidence of this condition.

Surgery of the Cleft Palate: by Arthur E. Smith, M.D., D.D.S., and James B. Johnson, M.D., Los Angeles, Calif. From the American Journal of Surgery, July, 1939.

The authors call attention to the fact that cleft palate is not due to mal-development of the parts, but non-fusion of the component parts of the face. This non-fusion may exist in any fusion line, but is most common in the lip and palate regions. "Of the congenital facial anomalies, none has commanded more attention than the cleft palate, and probably none has proved more difficult or baffling from the surgical standpoint." The mental hazards of the unoperated or unsuccessful operated cleft palate are hardly accountable to the normal individual. The deformity should be corrected early in life because of the endless chain of mental and physical sequelae. It is usually thought that an inferiority complex develops from a chain of events begun early in the life of an individual, and especially at the beginning of school age. For this reason, the palate should be corrected before the time of beginning school.

In outlining the treatment of a condition, a definite objective must be established. This is usually the removal of the handicap or handicaps which accompany the deformity. These are stated by the author to be not only mechanical closure of the cleft, but the establishment of a long flexible non-scarred normal functioning soft palate which forms velum hanging from the hard palate. "It is only optimism or ego on the part of the surgeon to feel that satisfactory results have been obtained when merely closure of the cleft has been accomplished."

Further correction of the deformity includes the second operation on the cleft palate and reconstruction of nasal deformity usually accompanying these defects. The chief factor in the correction of the cleft palate is restoration of normal speech.

The etiology of cleft palate and hare lip is discussed, but no new theories are brought forth, and no definite etiology is assigned.

The incidence is reported from one large series of births in which there is one cleft to 100,000 births in white children, and one cleft to 1,,800 births in colored children. The occurrence is relatively higher in boys than in girls.

A relatively simple classification of the type of cleft palate is given. Closure of the cleft by mechanical appliances is discussed and condemned except as a temporary measure to prepare for plastic reconstruction in advanced age, and advanced diseases as cancer, tuberculosis, and syphilis.

Surgical treatment of closure of the lip is best done as soon as the patient's condition permits, possibly within the first three or four weeks of life. The authors believe that the ideal age for the closure of cleft palate is three or four years. A two-stage procedure is given for the closure of the cleft palate with "push-back" operation as part of the procedure. This is for lengthening the soft palate and relaxation of these structures in order to aid in the restoration of normal speech.

The first operation accomplishes establishment of collateral circulation. The second, pushing back of the entire soft tissue of the palate and closure of the cleft. These authors use wiring between the dental arches to hold rubber sponges against the palate for pressure. Following the surgery, special training is always given which is considered a most important part of the procedure. Without this, the authors will not attempt surgery.

"After the palate is reconstructed, the capable surgeon produces a closed palate and a long flexible soft palate in which the muscles are able to function normally after which there is no organic reason why the cleft palate should persist. Surgery which leaves the palate scarred, tight, contracted and too short, does not relieve the mechanical difficulties with consonant formulations and therefore cannot be considered adequate. However, in such cases, speech training will improve the enunciation."

Conclusions: The authors have written an up-to-date opinion on cleft palate. The time of the operation is somewhat later than that practiced in this community.

It is gratifying to note that the authors are not content with a single surgical closure of the palate. It is now clearly understood that a successful outcome of cleft palate surgery includes the following factors. (1) Surgical closure with normal length, flexible tissue, and adequate palato-pharyngeal closure. (2) Adequate speech training. (3) Removal of mental handicap and tendency to development of inferiority complex.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
717 North Robinson Street, Oklahoma City

Cysts of the Semilunar Cartilage. George E. Bennett. American Journal of Surgery, XLIII, 512, February, 1939.

Cysts of the semilunar cartilage are comparatively rare. Authors agree on symptomatology, signs and treatment, but disagree on etiology. A limp or limitation of motion is seldom present, but easy fatigue of the involved leg is frequent. Cysts, themselves, are not responsible for relaxation of the ligaments of the knee. On examination, it is not common to find an increase in synovial fluid, atrophy of the thigh and calf, or flexion deformities. Diagnosis is not difficult as a rule. Differentiation from a bursa arising from the medial and lateral ligaments and true synovial outpouchings is the most common problem.

The author gives various theories concerning the etiology, including trauma, local changes in cell metabolism, and congenital causes. Treatment consists in complete removal of the cartilage with the cyst. Simple removal of the cyst is often followed by recurrence. The cysts are usually found to be multilocular. No signs of active inflammation are reported in the cysts. Dr. Bennett believes that the cyst arises in a traumatized area in the capsular border of the cartilage, which undergoes mucoid degeneration and cyst formation.

Acute Hematogenous Bursitis. Morris B. Cooperman. Annals of Surgery, CVIII, 1094, 1938.

Acute bursal infections of hematogenous origin are rare complications of acute infectious diseases or septicaemias, or are metastatic lesions secondary to infections in other parts of the body. They must be differentiated from acute infectious arthritis or acute osteomyelitis. Needling is an important diagnostic measure. One must have thorough knowledge of the anatomical location of the various bursae. Gluteal bursitis is most difficult to diagnose. The treatment is incision and drainage when fluctuation is present. The author reports six cases, four involving the subacromial bursa and two involving the prepatellar and gluteal bursae.

Chromicized Beef Tendon for Internal Fixation of Fractures. Frank P. Strickler. Annals of Surgery, CVIII, 1102, 1938.

The author describes the use of chromicized beef

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tendon prepared in plates, cuffs, and pegs for internal fixation in fractures. It is claimed to have the following advantages: it can be made absolutely sterile; it is easy to work with; it does not show on a roentgenogram; it will remain in position 60 to 90 days; if properly introduced, it has sufficient strength to maintain reduction of the fracture; and it is absorbed in about 90 days. Ten cases in which this material was used are reported.

Spatergebnisse Von Sehnennahten an Arm und Hand (Late Results of Tendon Suture in the Arm and Hand). Fritz Heck. Archiv Fur Orthopadische und UnfallChirurgie, XXXIX, 21, 1938.

On the basis of 75 cases of tendon suture in the arm and hand (59 primary and 16 delayed) and a review of the literature, the writer recommends primary suture where at all possible, except in cases of badly mangled flexor tendons. In the case of the extensor tendons, there was little difference between the results obtained by immediate suture and those following delayed suture. In the flexor tendons, the results were poorer with the delayed suture.

Die Bruche Des Korpernahen Oberarmendes (Fractures of the Proximal End of the Humerus). Franz Scheidter. Archiv fur Orthopadishe und Unfall-Chirurgie, XXXIX, 29, 1938.

One hundred and twenty-five cases of fracture of the proximal end of the humerus are analyzed and tabulated, and the etiology and treatment are discussed at considerable length. These fractures are more frequent in older individuals, and two-thirds of them are extracapsular. They show typical displacements. Reduction is preferably accomplished under local anaesthesia with the patient in the sitting position. The subjects arms are clasped behind the back of the operator, who grasps them just below the shoulders. The patient is held by an assistant, and the fracture is reduced by rotation of the operator's body. Fixation by an abduction plaster is preferred. In simple cases a splint is used. Open reduction is rarely indicated, and then only with nerve injuries or fracture dislocations which cannot be reduced by closed methods. Residual disability is rare and is usually caused by capsular changes rather than by malposition.

CARDIOLOGY

Edited by F. Redding Hood, M.D.
1200 N. Walker St., Oklahoma City

A Comprehensive Approach to the Diagnosis of Diseases of the Heart. Fredrick A. Willius. Medical Clinics of North America, July, 1939.

In this practical and common sense discussion, Dr. Willius warns against the dangers of overmechanization of diagnosis and hopes that the time tested methods of physical diagnosis will remain a cardinal means of approach, yet weighing facts and contradictions, and arriving at a logical conclusion from the accumulation of unmistakable evidence from all possible sources.

The diagnostician must be equipped with a well founded knowledge of pathology and a practical understanding of the physiology of the cardiovascular system in order that he may be able to interpret and evaluate the varying expressions of disturbed functions.

He discusses the subject according to the time honored system and some of the points discussed are here outlined:

History: The age of the patient immediately narrows the scope of possibilities. The first ten years of life; rheumatic carditis and congenital heart disease predominate; 20 to 40 years, overwhelmingly rheumatic carditis; while cardio-vascular syphilis is encountered but the other forms of heart disease are infrequent; 40 to 60 years is the age of coronary and hypertensive heart disease. It is in this age group that cardio-vascular syphilis most frequently manifests itself. Rheumatic heart disease is still encountered but congenital heart disease rarely. During the 60 to 80 age period, coronary and hypertensive heart disease hold sway.

Sex: Coronary and cardio-vascular diseases occur predominantly in the male, while rheumatic and hypertensive heart disease afflict the two sexes more nearly equal.

Family History: The degenerative cardia-vascular diseases are in a measure influenced by heredity. A family history of coronary disease or hypertension may arouse suspicion as to the condition of the patient.

Past Illnesses: Past rheumatic bouts or previous chancre are only two of the many examples which aid in the final conclusion.

Elicitation of Symptoms: No better example could be given than that of angina pectoris where the history of retrosternal pain or oppression of short duration, precipitated by accustomed effort and promptly relieved by rest, makes the diagnosis when all other sources of information fail.

Physical Examination: The sense of observation will reveal many valuable facts such as cyanosis, its intensity, and distribution. Cyanotic flushing of the malar eminences at once suggests the presence of mitral stenosis. Central pallor of the face, intensified by cyanosis of adjacent areas and of the lips, suggests the possibility of aortic disease. Marked diffuse cyanosis, intensified by moderate exertion, would suggest the probability of congenital cardiac defect. Cyanosis of the digits with clubbing deformity suggests congenital cardiac defects or the possibility of subacute endocarditis.

The manner of respiration is of great value. The presence of dyspnea alone is important, and the distinction between expiratory and inspiratory effort aids in distinguishing between heart failure and bronchial asthma. Cheyne-Stokes type warns of serious disease. The sighing type of respiration identifies the functional dyspnea of the neurotic individual.

Inspection of the neck may reveal distended and tortuous jugular veins indicating retardation or obstruction of the venous return, and when associated with distention of the superficial veins of the upper extremities and some degree of cyanosis, indicate increased venous pressure. Irregular pulsation of the carotid arteries frequently permits recognition of premature contractions and auricular fibrillation. Extremely slow pulsations in the carotid arteries with rapid pulse waves in the jugular veins suggests the presence of heart block. Full pulsations of the peripheral arteries with a rapid drop of pulse stroke suggests the existence of aortic regurgitation.

A clearly visible apex beat displaced laterally in the sixth intercostal space is almost certain proof of enlargement ofthe left ventricle. Likewise, pulsations in the third or fourth inter-costal spaces, near the sternal border, are suggestive evidence of enlargement of the right ventricle. Broadbent's sign (the systolic retraction of the left thoracic wall) is occasionally observed in the presence of adherent pericarditis. Diastolic protrusion of the anterior portion of the thoracic wall frequently offers an early clue as to the presence of aneurysm.

The tactile sense verifies some of the observation already considered. Thrills invariably indicate passage of blood through a narrowed orifice or through a spurious channel, such as may occur in congenital cardiac defects. A presystolic or diastolic

thrill at the apex immediately suggests mitral stenosis, while a rough systolic thrill at, or near, the second and third intercostal spaces, to the right of the sternum, is frequently a sign of stenosis of the aortic valve. A prolonged systolic thrill to the left of the lower or middle part of the sternum, would justify suspicion of the existence of a congenital cardiac defect. Palpation may confirm other observation regarding cardiac rhythm.

Although percussion may be considered inaccurate, there are many contingencies in which percussion is of paramount importance in arriving at an intelligent opinion as to heart size, when roentgenologic examination is not available. Determination of the heart size is many times a crucial point in distinguishing the diseased from the normal heart. An enlarged heart is a diseased heart.

An accentuated pulmonic second sound is normal in the infant or child but absolutely abnormal in the adult and the results from the forceful closure of the pulmonic valve due to increased pressure in the pulmonary circulation such as occurred in atherosclerosis of the pulmonary arterioles. In the mitral stenosis an absent aortic second sound always occurs in association with a systolic murmur. Results when the leaflets of the aortic valve do not move and with the exception of a rare congenital deformity this condition exists only in calcareous stenosis of the aortic valve. The accentuation of the aortic second sound at once suggests the presence of arterial hypertension.

Fluoroscopy is of extreme value in studying cardiac activity, abnormal dilatations and pulsations, would also permit recognition and localization of deposits of calcium.

Heart size may be determined. The normal heart being in its maximal transverse diameter less than 50 per cent of the transverse internal diameter of the thorax. Exceptions to this rule are that in the massively built, stocky, short-necked individual a relatively high diaphragm is the rule, reducing the vertical diameter of the thorax and displacing the heart upward giving an appearance of cardiac enlargement. In obese individuals the heart is actually larger than in a thin person or one of normal weight.

Although roentgenographic methods are of great importance and value they have their limitations and unless these restrictions are appreciated may lead to serious error.

Electrocardiography has advanced the accuracy of cardiac diagnosis. However, this method does not contain the answers to all questions. (This is merely another laboratory method as an aid to clinical diagnosis and should be interpreted as such). It is helpful in the diagnosis of myocardial infarction, in the identification of arrhythmia, and may produce a picture suggestive of disturbances of physiology as occur in hypertensive heart disease, mitral stenosis, congenital heart disease, etc., but caution should be used in interpreting results without clinical information. We must remember too that we may have serious heart disease such as angina pectoris without any positive findings by physical examination or from the laboratory. Dr. Willius concludes that the advantages of all methods must be utilized at all times in respective limitation under varying conditions and their changing order of importance from case to case must be recognized. He emphasizes the necessity in stressing the value of the art and science of physical diagnosis in an era that is inclined to depend on mechanical devices.

INTERNAL MEDICINE

Edited by Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

Advantages of Prozinsulin (Protamine Zinc Insulin) Therapy: Dietary Suggestions and Notes on the Management of Cases. By Herbert Pollack and Henry Dolger, New York, N. Y.

This appears to be a very practical report and is summarized in a very brief and clear manner by the authors as follows:

With proper dietary control, prozinsulin offers definite advantages for the routine case of diabetic patients. These advantages can be stated briefly as follows:

1. The single injection daily for patients.
2. Complete elimination of transient ketonuria.
3. Closer approximation to the normal carbohydrate metabolism.
4. Decrease in the incidence of hypoglycemic episodes.
5. Valuable as a supplementary agent in coma therapy.
6. Improvement in post-operative control of diabetic patients.
7. Obviates the absolute necessity of multi-feeding schedules, yet permits optional midnight "snacks."

The essentials of the suggested dietary regimes are as follows:

1. The use of small breakfasts.
2. Division of carbohydrate into 1/5, 2/5, 2/5 for the respective morning, midday and evening meals.
3. Distribution of protein to allow for over one-half of the daily allowance at the evening meal.
4. Increased time interval between meals with particular reference to late suppers.
5. Elimination from the diet of rapidly available carbohydrate.
6. Specific use of fats in delaying gastric-emptying time, such as cream with banana.

The majority of patients respond well, and are controlled with greater ease on such a regime. Frequent observation and meticulous attention to details of diet will be rewarded by better control of even the most unstable cases. The use of supplementary doses of old insulin can be almost completely avoided.

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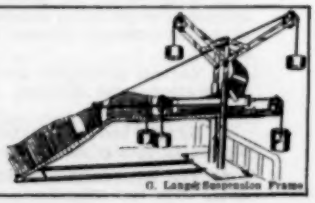
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The Value of the Weltmann Serum Coagulation Reaction as a Laboratory Diagnostic Aid; Comparison with the Sedimentation Rate. By S. A. Levinson, M.D., F.A.C.P., and R. I. Klein, M.D., Chicago, Illinois.

The authors report a test which is apparently being used with the hopes of distinguishing between "exudative and fibrotic processes and to some extent parenchymal liver damage."

The test is simple and performed by addition of serum diluted 50 times with distilled water, added in graduated amounts to a solution of calcium chloride and boiled for 15 minutes. Coagulation of serum is thus determined.

In pathological conditions the coagulation band may be normal, shortened or lengthened. In inflammatory and exudative processes coagulation is shortened and the band is said to have shifted to the left, whereas in fibrotic processes and those conditions associated with parenchymal damage of the liver, a shift to the right or lengthening of the coagulation band is obtained. The authors have studied the reaction in 2,000 cases of various diseases and show interesting comparison of the reaction with that of the sedimentation rate as a diagnostic aid. The reports on the various types of diseases indicate that the test is a very helpful link in the chain of diagnosis.

Weltmann, who originated the disease, made his report in non-English foreign literature and consequently most of the publications which have followed have been foreign.

Comment: Our experience with the test is extremely limited, but it is a simple test and seems likely to prove just as satisfactory, if not more satisfactory and helpful, than the sedimentation rate.

UROLOGY

Edited by D. W. Branham, M.D.
514 Medical Arts Building, Oklahoma City

Gonorrhea in the Female: A Study of 3,838 Cases with Special Reference to Electrosurgical Treatment of Gonorrheal Endocervicitis. Samuel Goldblatt, M.D., M.S., Venereal Disease Consultant to the Cincinnati Health Department. Venereal Disease Information, Vol. 20, No. 6, June, 1939.

Summary: In this study 3,838 consecutive cases of gonorrheal endocervicitis were treated by various methods. This treatment was carried out from 1928 to 1937 in the Quarantine Hospital of the Cincinnati area, where observation was continuous and where such complicating factors as re-exposure, alcohol, and sexual activity were completely ruled out. An additional 149 cases from Shoemaker Clinic were ambulatory patients. The study may be summed up in the following manner:

1. The various types of diagnostic methods in accepted usage are found to be inadequate for dismissing a patient as not infected unless there is continuous repetition of these examinations.

2. The endocervix apparently is the primary site of infection.

3. Analyses of the occurrence of other venereal diseases complicating gonorrhea, and the frequency of genito-urinary lesions in gonorrhea, are presented.

4. Various antiseptic medications, such as topical applications and douches, do not give satisfactory results.

5. Simple bed rest, extending for as long as 15 weeks, is totally ineffective as a method of cure.

6. The hypodermic injection of autogenous vaccines into the submucosa of the cervix, tried in a comparatively small number of cases, has little value.

7. Neutral acriflavine, used intravenously, while producing some prompt results, has serious disadvantages.

8. The fertility rate of females with gonorrhea is included, because it seems to contradict the accepted idea of "one-child sterility." Abortions, though frequent, are practically always self-induced.

9. Electrosurgery is found to be the most successful method of obtaining prompt cures, without serious complications even when used in cases of gonorrhea where any stage of pregnancy is involved. The technic is performed as follows:

A ball electrode is fitted in the os rather snugly, the current from a high frequency endothermy apparatus turned on and with varying degree of pressure the ball is rotated and very slowly withdrawn. Care must be exercised to produce a wide base at the external os or atresia of the canal may result. Following the operation a slough separates after 10 days leaving a very vascular granulating area. In most cases the infected cervix is reduced in size with a marked lessening of the discharge within a very short length of time.

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